

## **Appendix B. SDAM Forms**

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# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne													
Address Klickitat County			Date 4/5/2022												
Waterway Name Stream 1		Coordinates at downstream end (ddd.mm.ss) Lat. 45.831 N Long. 120.904 W													
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")													
Precipitation w/in 48 hours (cm) 1.35		Channel Width (m) 1.4													
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>100</u> % of reach w/any flow (surface or hyporheic) <u>100</u> # of pools observed <u>0</u>														
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status): Salix spp (FACW), Phalaris arundinacea (FACW)		<b>Observed Macroinvertebrates:</b> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Taxon</th> <th style="text-align: left;">Indicator Status</th> <th style="text-align: left;">Ephemeroptera?</th> <th style="text-align: left;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td>Odonota</td> <td></td> <td></td> <td style="text-align: center;">3</td> </tr> <tr> <td>Ephemeroptera</td> <td></td> <td></td> <td style="text-align: center;">6</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	Odonota			3	Ephemeroptera			6
Taxon	Indicator Status	Ephemeroptera?	# of Individuals												
Odonota			3												
Ephemeroptera			6												
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) <u>2</u> %														
<b>Conclusions</b>															
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial													

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) Cows were present along the creek, and prevented observation of more macroinvertebrates.

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is heavily grazed and utilized by livestock.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 001

Predominant vegetation is reed canary grass and willows.  
Landowner noted that the creek flows all year round, as it is fed upstream by a spring. There are wetlands along the banks of the creek.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

The general area is much drier, and there is a clear change between the upland and the riparian.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne									
Address Klickitat County			Date 4/5/2022								
Waterway Name Stream 1		Coordinates at downstream end									
Reach Boundaries Study area width.		Lat. 45.8391	N								
		Long. 120.8883	W								
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.25	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>100</u> % of reach w/any flow (surface or hyporheic) <u>100</u> # of pools observed <u>0</u>										
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status): Salix spp (FACW), Juncus effusus (FACW)	<b>Observed Macroinvertebrates:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 15%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center; padding: 5px;">None</td> </tr> </tbody> </table>		Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) <u>3</u> %										
<b>Conclusions</b>	<pre>                     graph TD                         Q1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; Q2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]                         Q1 -- No --&gt; Q4[Are SAV, FACW, or OBL plants present? (Indicator 4)]                         Q2 -- Yes --&gt; Q3[Are perennial indicator taxa present? (Indicator 3)]                         Q2 -- No --&gt; I2[INTERMITTENT]                         Q3 -- Yes --&gt; P1[PERENNIAL]                         Q3 -- No --&gt; Q5[What is the slope? (Indicator 5)]                         Q4 -- Yes --&gt; Q5                         Q4 -- No --&gt; E1[EPHEMERAL]                         Q5 -- Slope &lt; 16% --&gt; I3[INTERMITTENT]                         Q5 -- Slope &gt;= 16% --&gt; P2[PERENNIAL]                         Q5 -- Slope &lt; 10.5% --&gt; I4[INTERMITTENT]                         Q5 -- Slope &gt;= 10.5% --&gt; E2[EPHEMERAL]                     </pre>										
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial									

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 13 and 15

Predominant vegetation is willow, rose, rushes, and grass.

This area is disturbed and used for agricultural purposes. There is some canopy cover at the wetland spots that are dotted along the drainage, otherwise there is no canopy cover. The substrate is rocky, with gravel in the bottom.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

There is a subtle change between the upland and the riparian, the primary change being the substrate,

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

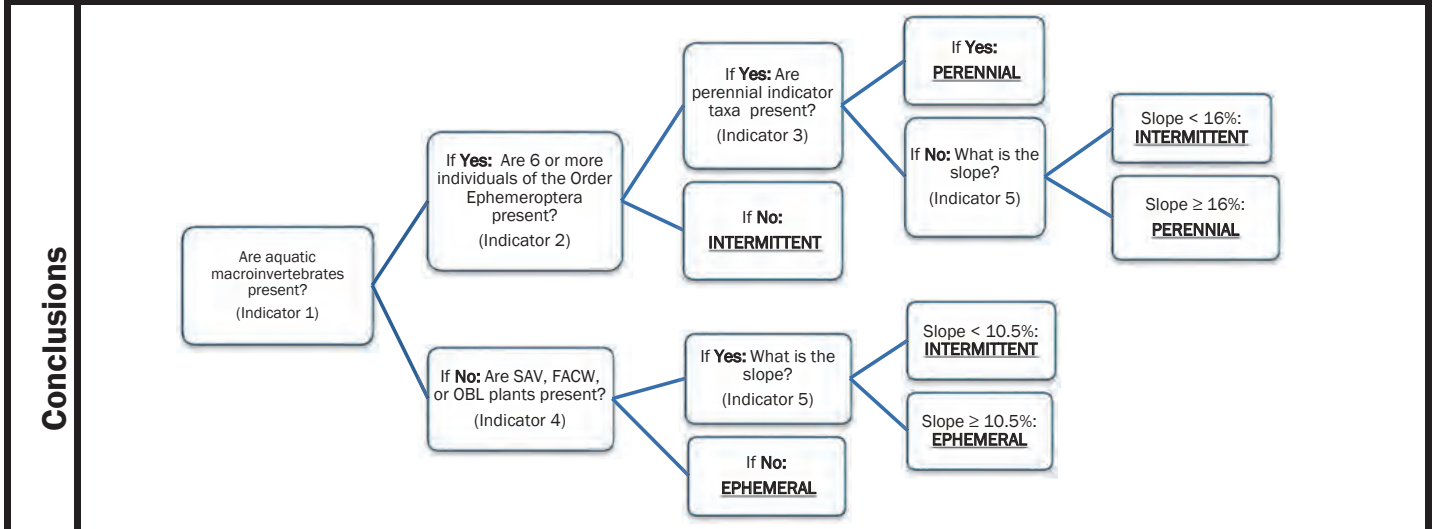
# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne	
Address Klickitat County			Date 4/5/2022
Waterway Name Stream 1		Coordinates at downstream end (ddd.mm.ss)	Lat. 45.8578 N
Reach Boundaries Study area width.			Long. 120.8742 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 0.5	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")	

<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u>
	% of reach w/any flow (surface or hyporheic) <u>0</u>
	# of pools observed <u>0</u>

<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b>							
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 10%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 35%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals						
None									

<b>Indicators</b>	1. Are aquatic macroinvertebrates present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	2. Are 6 or more individuals of the Order Ephemeroptera present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	3. Are perennial indicator taxa present? (refer to Table 1)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	



<b>Single Indicators:</b>	<b>Finding:</b>
<input type="checkbox"/> Fish	<input checked="" type="checkbox"/> Ephemeral
<input type="checkbox"/> Amphibians	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> Perennial

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 19

Predominant vegetation is buckwheat, yarrow, grass, and clover. This area is heavily grazed and utilized by cattle. There is little to no canopy cover, and the soil is compacted. The substrate is rocky, with gravel in the bottom.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct change in vegetation between the upland and the riparian, only change in substrate.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			



# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Summer Roberts												
Address Klickitat County			Date 4/25/2024											
Waterway Name ST-01; ST-01a		Coordinates at downstream end (ddd.mm.ss) Lat. 45.874098 N Long. 120.874509 W												
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")												
Precipitation w/in 48 hours (cm) 0		Channel Width (m) 1.0												
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>100</u> % of reach w/any flow (surface or hyporheic) <u>100</u> # of pools observed <u>0</u>													
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status): Populus balsamifera (FAC), Camassia quamash (FACW), Montia fontana (OBL).		<b>Observed Macroinvertebrates:</b>											
			<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Taxon</th> <th style="text-align: left; width: 15%;">Indicator Status</th> <th style="text-align: left; width: 15%;">Ephemeroptera?</th> <th style="text-align: left; width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td>Odonota</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ephemeroptera</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	Odonota				Ephemeroptera		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals											
Odonota														
Ephemeroptera														
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>													
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>													
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>													
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>													
	5. What is the slope? (In percent, measured for the valley, not the stream) <span style="float: right;"><u>2</u> %</span>													
<b>Conclusions</b>														
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial												

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) Recent burn area, stream is a continuation from the west side of Knight Road.

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #42 and #45

Predominant vegetation is black cottonwood and rose shrubs.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

The general area is within and surrounded by a ground spring-fed wetland.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne									
Address Klickitat County			Date 4/5/2022								
Waterway Name Stream 2		Coordinates at downstream end (ddd.mm.ss) Lat. 45.8427 N Long. 120.8887 W									
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
Precipitation w/in 48 hours (cm) 1.35		Channel Width (m) 1									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u> % of reach w/any flow (surface or hyporheic) <u>0</u> # of pools observed <u>0</u>										
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status): Navaretia, popcorn flower, willow		<b>Observed Macroinvertebrates:</b>  <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Taxon</th> <th style="text-align: left; width: 15%;">Indicator Status</th> <th style="text-align: left; width: 15%;">Ephemeroptera?</th> <th style="text-align: left; width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="padding: 5px;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) <u>3</u> %										
<b>Conclusions</b>	<pre>                     graph TD                     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]                     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]                     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]                     I2 -- No --&gt; I2N[INTERMITTENT]                     I3 -- Yes --&gt; I3Y[PERENNIAL]                     I3 -- No --&gt; I5[What is the slope? (Indicator 5)]                     I4 -- Yes --&gt; I5                     I4 -- No --&gt; I4N[EPHEMERAL]                     I5 -- Slope &lt; 16% --&gt; I5N1[INTERMITTENT]                     I5 -- Slope &gt;= 16% --&gt; I5N2[PERENNIAL]                     I5 -- Slope &lt; 10.5% --&gt; I5N3[INTERMITTENT]                     I5 -- Slope &gt;= 10.5% --&gt; I5N4[EPHEMERAL]                 </pre>										
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial									

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 12

Predominant vegetation is buckwheat, with wetland vegetation in the stream channel. There are a few trees, but for the most part there is no canopy cover.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

There is no distinct change in vegetation between the upland and the riparian, only substrate.

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne									
Address Klickitat County			Date 4/5/2022								
Waterway Name Stream 3		Coordinates at downstream end									
Reach Boundaries Study area width.		Lat. 45.8463	N								
		Long. 120.8897	W								
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u> % of reach w/any flow (surface or hyporheic) <u>0</u> # of pools observed <u>0</u>										
<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%; text-align: center;">Taxon</th> <th style="width: 15%; text-align: center;">Indicator Status</th> <th style="width: 15%; text-align: center;">Ephemeroptera?</th> <th style="width: 30%; text-align: center;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center; padding: 5px;">None</td> </tr> </tbody> </table>		Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) <u>3</u> %										
<b>Conclusions</b>	<pre>                 graph TD                 I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]                 I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]                 I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]                 I2 -- No --&gt; I5a[What is the slope? (Indicator 5)]                 I3 -- Yes --&gt; P[PERENNIAL]                 I3 -- No --&gt; I5a                 I4 -- Yes --&gt; I5b[What is the slope? (Indicator 5)]                 I4 -- No --&gt; E[EPHEMERAL]                 I5a -- Slope &lt; 16% --&gt; I5c[Slope &lt; 10.5%: INTERMITTENT]                 I5a -- Slope &gt;= 16% --&gt; P                 I5b -- Slope &lt; 10.5% --&gt; I5c                 I5b -- Slope &gt;= 10.5% --&gt; E             </pre>										
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial										

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 16

Predominant vegetation is buckwheat, with upland vegetation in the stream channel. The substrate is vegetated with grasses, and the channel banks are not very well defined. There is little to no canopy cover, with a few trees congregated by the culvert under the road.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct difference between the upland and riparian.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne								
Address Klickitat County			Date 4/5/2022							
Waterway Name Stream 4		Coordinates at downstream end (ddd.mm.ss) Lat. 45.8246 N Long. 120.8978 W								
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")								
Precipitation w/in 48 hours (cm) 1.35		Channel Width (m) 1.5								
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>70</u>									
	% of reach w/any flow (surface or hyporheic) <u>70</u>									
	# of pools observed <u>10</u>									
<b>Observations</b>	<b>Observed Wetland Plants</b> (and indicator status): Salix spp (FACW), Juncus effusus (FACW)		<b>Observed Macroinvertebrates:</b>							
			<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Taxon</th> <th style="text-align: left; width: 15%;">Indicator Status</th> <th style="text-align: left; width: 20%;">Ephemeroptera?</th> <th style="text-align: left; width: 25%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="padding: 5px;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals							
None										
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>									
	5. What is the slope? (In percent, measured for the valley, not the stream) <span style="float: right;"><u>3</u> %</span>									
<b>Conclusions</b>	<pre> graph TD     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]     I2 -- No --&gt; I5_1[What is the slope? (Indicator 5)]     I3 -- Yes --&gt; P1[PERENNIAL]     I3 -- No --&gt; I5_1     I5_1 -- Slope &lt; 16% --&gt; I5_2[INTERMITTENT]     I5_1 -- Slope &gt;= 16% --&gt; P2[PERENNIAL]     I4 -- Yes --&gt; I5_3[What is the slope? (Indicator 5)]     I4 -- No --&gt; E1[EPHEMERAL]     I5_3 -- Slope &lt; 10.5% --&gt; I5_4[INTERMITTENT]     I5_3 -- Slope &gt;= 10.5% --&gt; E2[EPHEMERAL]     </pre>									
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial								

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 9

Predominant vegetation is willow, rose, and rushes. There are trees in the upland, but the stream has limited canopy cover. The substrate is rocky with some sand.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

There is evidence of erosion throughout the reach with cut banks.

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			



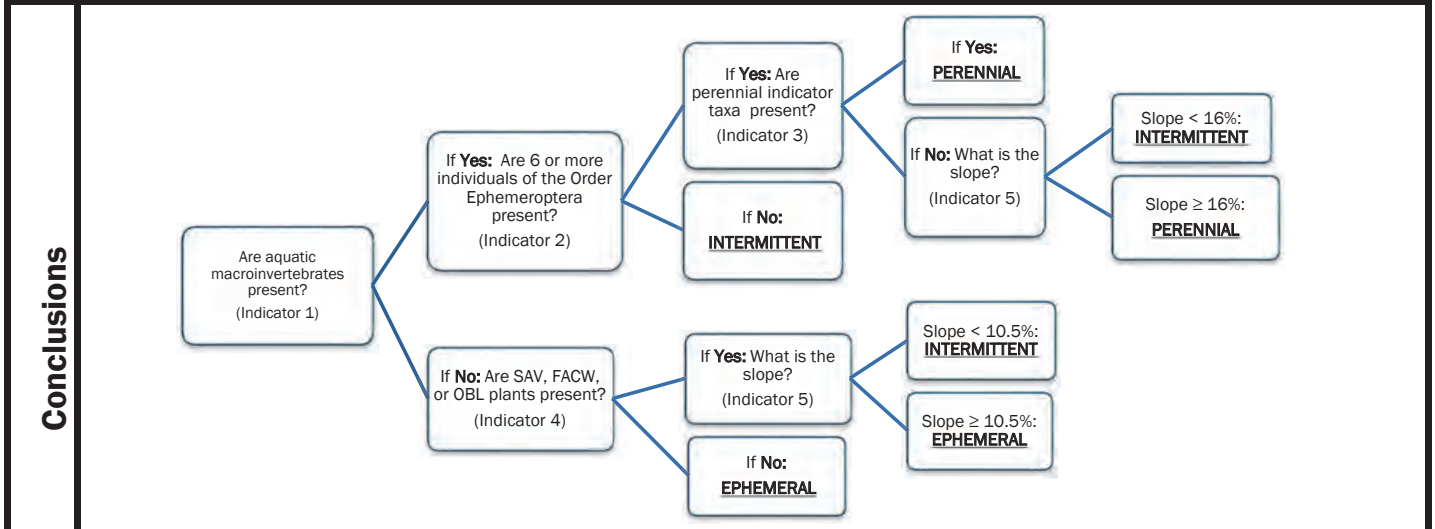
# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne	
Address Klickitat County			Date 4/5/2022
Waterway Name Stream 4		Coordinates at downstream end (ddd.mm.ss)	Lat. 45.8606 N
Reach Boundaries Study area width.			Long. 120.8689 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 0.8	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")	

<b>Observed Hydrology</b>	% of reach w/observed surface flow <sup>0</sup> _____
	% of reach w/any flow (surface or hyporheic) <sup>0</sup> _____
	# of pools observed <sup>0</sup> _____

<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b>							
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 15%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals						
None									

<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>
	5. What is the slope? (In percent, measured for the valley, not the stream) <span style="float: right;">3 %</span>



<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial
---	--

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 18

Predominant vegetation is yarrow, grass, and clover. This area is heavily grazed and utilized by cattle. There are a few trees in the upland, but the stream has little to no canopy cover, and the soil is compacted. The substrate is rocky, with gravel in the bottom.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

There is no distinct change in vegetation between the upland and riparian.

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

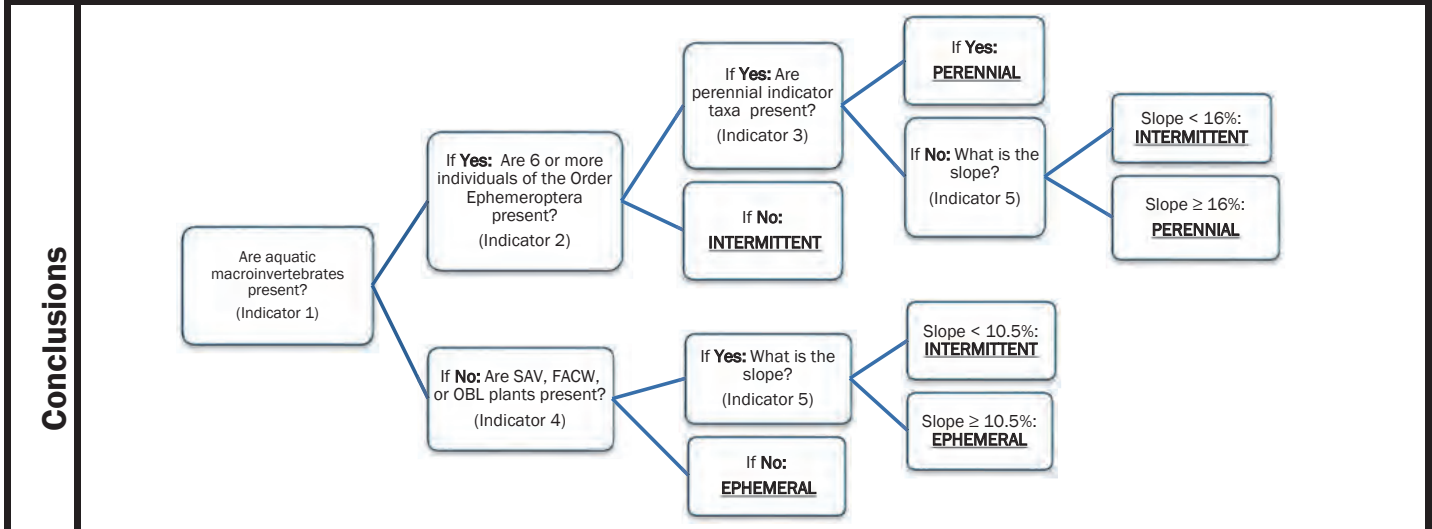
# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne	
Address Klickitat County			Date 4/5/2022
Waterway Name Stream 5		Coordinates at downstream end (ddd.mm.ss)	Lat. 45.8787 N
Reach Boundaries Study area width.			Long. 120.8969 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 0.5	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")	

<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u>
	% of reach w/any flow (surface or hyporheic) <u>0</u>
	# of pools observed <u>0</u>

<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b>							
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 10%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 35%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals						
None									

<b>Indicators</b>	1. Are aquatic macroinvertebrates present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	2. Are 6 or more individuals of the Order Ephemeroptera present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	3. Are perennial indicator taxa present? (refer to Table 1)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	



<b>Single Indicators:</b>	<b>Finding:</b>
<input type="checkbox"/> Fish	<input checked="" type="checkbox"/> Ephemeral
<input type="checkbox"/> Amphibians	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> Perennial

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 19

Predominant vegetation is ponderosa pine, yarrow, grass, and clover. There are trees in the upland and there fairly good canopy cover over the stream channel.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

There is no distinct change in vegetation between the upland and riparian.

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne								
Address Klickitat County			Date 4/5/2022							
Waterway Name Stream 6		Coordinates at downstream end (ddd.mm.ss) Lat. 45.8264 N Long. 120.8943 W								
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")								
Precipitation w/in 48 hours (cm) 1.35		Channel Width (m) 1								
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>50</u>									
	% of reach w/any flow (surface or hyporheic) <u>50</u>									
	# of pools observed <u>12</u>									
<b>Observations</b>	<b>Observed Wetland Plants</b> Salix spp (FACW) (and indicator status):		<b>Observed Macroinvertebrates:</b>							
			<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 15%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center; padding: 5px;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals							
None										
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>									
	5. What is the slope? (In percent, measured for the valley, not the stream) <span style="float: right;"><u>3</u> %</span>									
<b>Conclusions</b>	<pre> graph TD     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]     I2 -- No --&gt; I5_16[What is the slope? (Indicator 5)]     I3 -- Yes --&gt; P[PERENNIAL]     I3 -- No --&gt; I5_16     I5_16 -- Slope &lt; 16% --&gt; I5_16_16[INTERMITTENT]     I5_16 -- Slope &gt;= 16% --&gt; P     I4 -- Yes --&gt; I5_10_5[What is the slope? (Indicator 5)]     I4 -- No --&gt; E[EPHEMERAL]     I5_10_5 -- Slope &lt; 10.5% --&gt; I5_10_5_10_5_1[INTERMITTENT]     I5_10_5 -- Slope &gt;= 10.5% --&gt; E     </pre>									
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial							

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) There are spots with wetland vegetation, but they are not dominant.

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 5, 6, 7, and 11

Predominant vegetation is willow, clover, yarrow, buckwheat, and rose. There are a few trees in the wetland spots along the creek, but otherwise there is no canopy cover. The substrate is made up of sand and smaller particles. Not as rocky as other streams in the area.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is a subtle change in vegetation between the riparian and upland.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

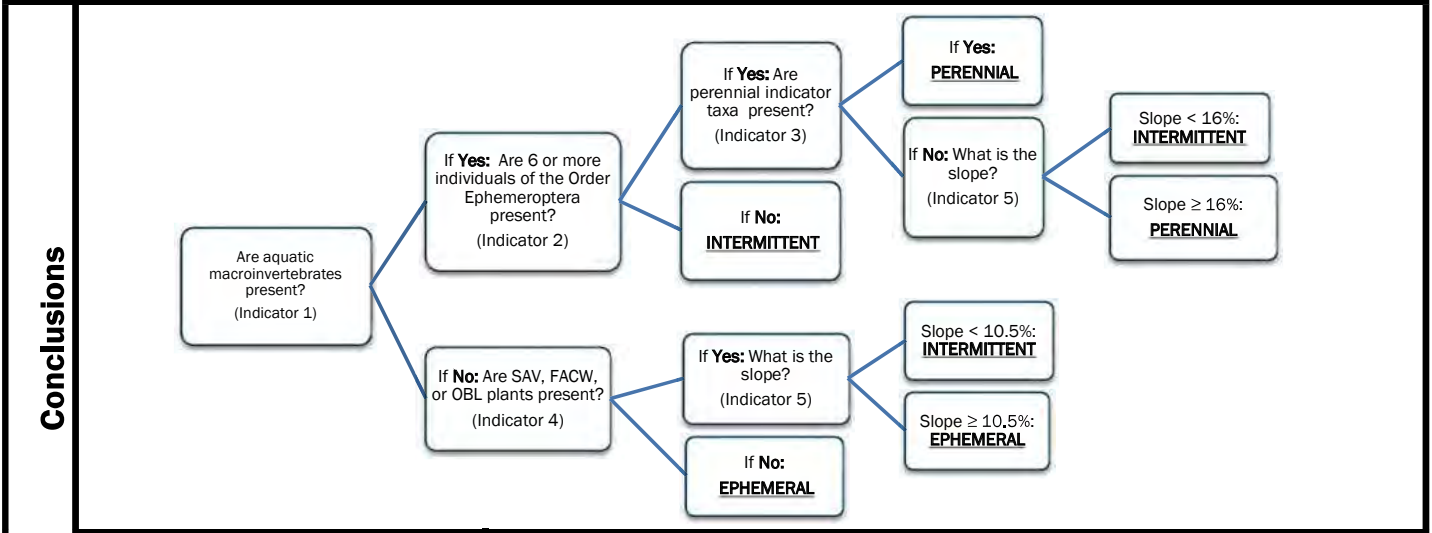
# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne	
Address Klickitat County			Date 4/5/2022
Waterway Name Stream 7		Coordinates at downstream end (ddd.mm.ss)	Lat. 45.8404 N
Reach Boundaries Study area width.			Long. 120.8815 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.25	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")	

<b>Observed Hydrology</b>	% of reach w/observed surface flow <sup>0</sup> _____
	% of reach w/any flow (surface or hyporheic) <sup>0</sup> _____
	# of pools observed <sup>0</sup> _____

<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b>							
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Taxon</th> <th style="width: 15%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals						
None									

<b>Indicators</b>	1. Are aquatic macroinvertebrates present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	2. Are 6 or more individuals of the Order Ephemeroptera present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	3. Are perennial indicator taxa present? (refer to Table 1)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	5. What is the slope? (In percent, measured for the valley, not the stream)	3	%



<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial
---	--

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 14

Predominant vegetation is buckwheat. There is no canopy cover, and the substrate is very rocky.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct change in vegetation, with upland vegetation in the channel.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed



# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne									
Address Klickitat County			Date 4/5/2022								
Waterway Name Stream 8		Coordinates at downstream end									
Reach Boundaries Study area width.		Lat. 45.8299	N								
		Long. 120.8945	W								
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 0.3	<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u> % of reach w/any flow (surface or hyporheic) <u>0</u> # of pools observed <u>0</u>										
<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):	<b>Observed Macroinvertebrates:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Taxon</th> <th style="text-align: left; width: 15%;">Indicator Status</th> <th style="text-align: left; width: 20%;">Ephemeroptera?</th> <th style="text-align: left; width: 25%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="padding: 5px;">None</td> </tr> </tbody> </table>		Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None			
Taxon	Indicator Status	Ephemeroptera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) <u>3</u> %										
<b>Conclusions</b>	<pre> graph TD     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]     I2 -- No --&gt; I2N[INTERMITTENT]     I3 -- Yes --&gt; P1[PERENNIAL]     I3 -- No --&gt; I5[What is the slope? (Indicator 5)]     I4 -- Yes --&gt; I5     I4 -- No --&gt; I4N[EPHEMERAL]     I5 -- Slope &lt; 16% --&gt; I5N1[INTERMITTENT]     I5 -- Slope &gt;= 16% --&gt; P2[PERENNIAL]     I5 -- Slope &lt; 10.5% --&gt; I5N2[INTERMITTENT]     I5 -- Slope &gt;= 10.5% --&gt; I5N3[EPHEMERAL]                 </pre>										
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial										

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo # 4

Predominant vegetation is clover, yarrow, and biscuitroot. Channel flows towards Stream 6. There is vegetation in the channel bottom, and is somewhat rocky. Acts somewhat as a drain dividing agricultural fields. There is no canopy cover.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct change between the upland and riparian, with upland vegetation in the channel.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne and Jessica Taylor			
Address Klickitat County			Date 6/27/2022		
Waterway Name ST-100		Coordinates at downstream end (ddd.mm.ss) Lat. 45°51'46.87"N N Long. 120°51'57.69"W W			
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")			
Precipitation w/in 48 hours (cm) 0		Channel Width (m) 0.3			
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u> % of reach w/any flow (surface or hyporheic) <u>0</u> # of pools observed <u>0</u>				
<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):		<b>Observed Macroinvertebrates:</b>		
			Taxon	Indicator Status	Ephemeroptera?
		None			
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>				
	2. Are 6 or more individuals of the Order Ephemeroptera present? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>				
	3. Are perennial indicator taxa present? (refer to Table 1) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>				
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>				
	5. What is the slope? (In percent, measured for the valley, not the stream) <span style="float: right;">5 %</span>				
<b>Conclusions</b>	<pre>                     graph TD                     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]                     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]                     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]                     I2 -- No --&gt; Interm1[INTERMITTENT]                     I3 -- Yes --&gt; Perenn1[PERENNIAL]                     I3 -- No --&gt; I5_1[What is the slope? (Indicator 5)]                     I5_1 -- Slope &lt; 16% --&gt; Interm2[INTERMITTENT]                     I5_1 -- Slope ≥ 16% --&gt; Perenn2[PERENNIAL]                     I4 -- Yes --&gt; I5_2[What is the slope? (Indicator 5)]                     I4 -- No --&gt; Ephem[EPHEMERAL]                     I5_2 -- Slope &lt; 10.5% --&gt; Interm3[INTERMITTENT]                     I5_2 -- Slope ≥ 10.5% --&gt; Ephem2[EPHEMERAL]                 </pre>				
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial		

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Predominant vegetation is clover, yarrow, and biscuitroot. Channel flows towards Stream 4. There is vegetation in the channel bottom, and is somewhat rocky. Acts somewhat as a drain dividing agricultural fields. There is no canopy cover.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct change between the upland and riparian, with upland vegetation in the channel.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Katie Pyne and Jessica Taylor									
Address Klickitat County			Date 6/27/2022								
Waterway Name ST-109		Coordinates at downstream end (ddd.mm.ss) Lat. 45°50'48.12" N Long. 120°52'39.80" W									
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
Precipitation w/in 48 hours (cm) 0		Channel Width (m) 0.3									
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>0</u> % of reach w/any flow (surface or hyporheic) <u>0</u> # of pools observed <u>0</u>										
<b>Observations</b>	<b>Observed Wetland Plants</b> None (and indicator status):		<b>Observed Macroinvertebrates:</b>								
			<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%; text-align: left;">Taxon</th> <th style="width: 10%;">Indicator Status</th> <th style="width: 15%;">Ephemeroptera?</th> <th style="width: 35%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center; padding: 5px;">None</td> </tr> </tbody> </table>		Taxon	Indicator Status	Ephemeroptera?	# of Individuals	None		
Taxon	Indicator Status	Ephemeroptera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No							
	2. Are 6 or more individuals of the Order Ephemeroptera present?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No							
	3. Are perennial indicator taxa present? (refer to Table 1)		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No							
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width)		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No							
	5. What is the slope? (In percent, measured for the valley, not the stream)		5 %								
<b>Conclusions</b>											
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial								

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

Area is used for agricultural purposes, and vegetation is disturbed.

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

Predominant vegetation is clover, yarrow, and biscuitroot. Channel flows towards Stream 1. There is vegetation in the channel bottom, and is somewhat rocky. There is no canopy cover.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

There is no distinct change between the upland and riparian, with upland vegetation in the channel.

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

# Streamflow Duration Field Assessment Form

Project # / Name Carriger Solar		Assessor Summer Roberts									
Address Klickitat County			Date 4/25/2024								
Waterway Name ST-400		Coordinates at downstream end (ddd.mm.ss) Lat. 45.831934 N Long. 120.868999 W									
Reach Boundaries Study area width.		<input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")									
Precipitation w/in 48 hours (cm) 0		Channel Width (m) 1.25									
<b>Observed Hydrology</b>	% of reach w/observed surface flow__0_ % of reach w/any flow (surface or hyporheic) __0__ # of pools observed__0__										
<b>Observations</b>	<b>Observed Wetland Plants</b> None. (and indicator status):		<b>Observed Macroinvertebrates:</b> None.  <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">Taxon</th> <th style="text-align: left; width: 15%;">Indicator Status</th> <th style="text-align: left; width: 15%;">Ephemer-optera?</th> <th style="text-align: left; width: 30%;"># of Individuals</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="padding: 5px;">None</td> </tr> </tbody> </table>	Taxon	Indicator Status	Ephemer-optera?	# of Individuals	None			
Taxon	Indicator Status	Ephemer-optera?	# of Individuals								
None											
<b>Indicators</b>	1. Are aquatic macroinvertebrates present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 2. Are 6 or more individuals of the Order Ephemeroptera present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 3. Are perennial indicator taxa present? (refer to Table 1) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. What is the slope? (In percent, measured for the valley, not the stream) 2% Slope										
<b>Conclusions</b>	<pre> graph TD     I1[Are aquatic macroinvertebrates present? (Indicator 1)] -- Yes --&gt; I2[Are 6 or more individuals of the Order Ephemeroptera present? (Indicator 2)]     I1 -- No --&gt; I4[Are SAV, FACW, or OBL plants present? (Indicator 4)]     I2 -- Yes --&gt; I3[Are perennial indicator taxa present? (Indicator 3)]     I2 -- No --&gt; I2N[INTERMITTENT]     I3 -- Yes --&gt; P1[PERENNIAL]     I3 -- No --&gt; I5[What is the slope? (Indicator 5)]     I4 -- Yes --&gt; I5     I4 -- No --&gt; I4N[EPHEMERAL]     I5 -- Slope &lt; 16% --&gt; I5N1[INTERMITTENT]     I5 -- Slope &gt;= 16% --&gt; P2[PERENNIAL]     I5 -- Slope &lt; 10.5% --&gt; I5N2[INTERMITTENT]     I5 -- Slope &gt;= 10.5% --&gt; I5N3[EPHEMERAL]                 </pre>										
<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians		<b>Finding:</b> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial									

**Notes:** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

Prolonged Abnormal Rainfall / Snowpack

Below Average

Above Average

Natural or Anthropogenic Disturbance

Surrounding area is used for agricultural purposes, and vegetation is disturbed.

Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

See Photo #102

Predominant vegetation is Sandberg bluegrass (*Poa secunda*, UPL) and barestem biscuitroot (*Lomatium nudicaule*, UPL). The surrounding area is disturbed and used for agricultural purposes. Soil within drainage is very shallow, and the substrate is rocky.

**Ancillary Information:**

Riparian Corridor

Erosion and Deposition

Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed



# **Appendix C. Wetland Datasheets and Rating Forms**

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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-300  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S06  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.864916 Long: -120.861599 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot on bench adjacent to intermittent stream.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
		_____	=Total Cover		
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>35</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>3.43</u>
1.	<u>Achillea millefolium</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Juncus effusus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
3.	<u>Sidalcea malviflora</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>35</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____			<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
Remarks:					

**SOIL**

Sampling Point: SP-300

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/4	100					Loamy/Clayey	Sandy silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
---	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-301  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S01  
 Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.860315 Long: -120.871797 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot on floodplain of waterway.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column Totals: <u>100</u> (A) <u>500</u> (B) Prevalence Index = B/A = <u>5.00</u>
1.	<u>Taeniatherum caput-medusae</u>	<u>95</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Convolvulus arvensis</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
=Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
=Total Cover					
=Total Cover					
% Bare Ground in Herb Stratum <u>    </u> % Cover of Biotic Crust <u>    </u>					

Remarks:

**SOIL**

Sampling Point: SP-301

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/4	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
---	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-302  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S01  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.860238 Long: -120.872176 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Rosa woodsii</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Taeniatherum caput-medusae</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
3.	<u>Poa secunda</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>    </u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>25</u>	x 5 = <u>125</u>
Column Totals: <u>80</u> (A)	<u>340</u> (B)
Prevalence Index = B/A = <u>4.25</u>	

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**Hydrophytic Vegetation Indicators:**

     Dominance Test is >50%

     Prevalence Index is ≤3.0<sup>1</sup>

     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Hydrophytic Vegetation Present?** Yes      No X

Remarks:

**SOIL**

Sampling Point: SP-302

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/4	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:	

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP303  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.874234 Long: -120.874311 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Recent fire, trees burned and cut down in places. Depression/swale at road edge.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus balsamifera</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>5</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Rosa woodsii</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>45</u> (A) <u>135</u> (B) Prevalence Index = B/A = <u>3.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>20</u> =Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	<u>X</u> Dominance Test is >50% _____ Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>20</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	_____	_____	_____	Yes <u>X</u> No <u>    </u>
2. _____	_____	_____	_____	
_____ =Total Cover				
% Bare Ground in Herb Stratum <u>90</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: SP303

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-304  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S11  
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.839198 Long: -120.888323 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in wooded riparian area.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus douglasii</u>	30	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
2. <u>Salix scouleriana</u>	50	Yes	FAC	
3. <u>    </u>				
4. <u>    </u>				
	80 =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Rosa woodsii</u>	20	Yes	FACU	Total % Cover of:                      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>85</u> x 3 = <u>255</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>25</u> x 5 = <u>125</u> Column Totals: <u>185</u> (A) <u>680</u> (B) Prevalence Index = B/A = <u>3.68</u>
2. <u>Symphoricarpos albus</u>	20	Yes	FACU	
3. <u>    </u>				
4. <u>    </u>				
	40 =Total Cover			
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Taeniatherum caput-medusae</u>	25	Yes	UPL	___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rumex crispus</u>	5	No	FAC	
3. <u>Poa secunda</u>	35	Yes	FACU	
4. <u>    </u>				
5. <u>    </u>				
6. <u>    </u>				
7. <u>    </u>				
8. <u>    </u>				
	65 =Total Cover			
Woody Vine Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. <u>    </u>				Yes <u>    </u> No <u>X</u>
2. <u>    </u>				
	=Total Cover			
% Bare Ground in Herb Stratum <u>    </u> % Cover of Biotic Crust <u>    </u>				

Remarks:

**SOIL**

Sampling Point: SP-304

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100					Loamy/Clayey	sandy clay loam
6-18	10YR 3/2	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
Tree area has a berm between stream and sample plot location. Sample point is located downhill from stream.

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-305  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): LRR B Lat: 45.874268 Long: -120.874344 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Sample site is in floodplain adjacent to intermittent stream (ST-01).	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>5</u> (A) <u>25</u> (B) Prevalence Index = B/A = <u>5.00</u>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	<u>Bromus tectorum</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>5</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum <u>95</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: SP-305

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-306  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832032 Long: -120.899163 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in low lying area.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Rosa woodsii</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ = Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Cirsium araneans</u>	<u>35</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Taraxacum officinale</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	
3.	<u>Bromus inermis</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ = Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>    </u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 4 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 150 x 4 = 600  
 UPL species 35 x 5 = 175  
 Column Totals: 185 (A) 775 (B)  
 Prevalence Index = B/A = 4.19

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

Remarks:

**SOIL**

Sampling Point: SP-306

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
No hydrology, irrigated.

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Irrigated crop.



Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-307  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.831570 Long: -120.900343 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Located in an irrigated area in between wheatfields. This sample site was dug in the path of the pivot where water collects.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Bromus inermis</u>	<u>95</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Taraxacum officinale</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>45</u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>100</u>	x 4 = <u>400</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>400</u> (B)
Prevalence Index = B/A = <u>4.00</u>	

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**Hydrophytic Vegetation Indicators:**

     Dominance Test is >50%

     Prevalence Index is ≤3.0<sup>1</sup>

     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Hydrophytic Vegetation Present?** Yes      No X

Remarks:

**SOIL**

Sampling Point: SP-307

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	65	7.5YR 3/4	35	C	M	Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-308  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): LRR B Lat: 45.831264 Long: -120.898031 Datum: WGS 84  
 Soil Map Unit Name: 97A Setnum silt loam, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Low spot area between irrigated crop fields.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>440</u> (B) Prevalence Index = B/A = <u>3.38</u>
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
		_____	=Total Cover		
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Asclepias speciosa</u>	<u>55</u>	<u>Yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Taraxacum officinale</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	
3.	<u>Potentilla gracilis</u>	<u>25</u>	<u>No</u>	<u>FAC</u>	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>130</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum <u>45</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: SP-308

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/1	100					Loamy/Clayey	Clay Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>		<b>Hydric Soil Present?</b>	
Type: _____		Yes _____	No <u>X</u>
Depth (inches): _____			
Remarks:			

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>				<b>Wetland Hydrology Present?</b>	
Surface Water Present?	Yes _____	No <u>X</u>	Depth (inches): _____	Yes _____	No <u>X</u>
Water Table Present?	Yes _____	No <u>X</u>	Depth (inches): _____		
Saturation Present?	Yes _____	No <u>X</u>	Depth (inches): _____		
(includes capillary fringe)					

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-309  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Flood Plain Local relief (concave, convex, none): Convex Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.826883 Long: -120.894217 Datum: WGS 84  
 Soil Map Unit Name: 96 Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. In black hawthorne grove.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus douglasii</u>	10	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
10 =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>105</u> (A) <u>490</u> (B) Prevalence Index = B/A = <u>4.67</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ =Total Cover				
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Sisymbrium altissimum</u>	15	No	FACU	
2. <u>Pseudoroegneria spicata</u>	80	Yes	UPL	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
95 =Total Cover				
Woody Vine Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	_____
_____ =Total Cover				
% Bare Ground in Herb Stratum <u>45</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: SP-309

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:	

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-310  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.826374 Long: -120.891044 Datum: WGS 84  
 Soil Map Unit Name: 96 Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in low area (abandoned side channel). Likely a historic wetland but hydrology is changed.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)
Prevalence Index = B/A = <u>2.00</u>	

**Hydrophytic Vegetation Indicators:**

X Dominance Test is >50%

     Prevalence Index is ≤3.0<sup>1</sup>

     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: SP-310

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	93	7.5YR 5/6	7	C	M	Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-311  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.825385 Long: -120.888310 Datum: WGS 84  
 Soil Map Unit Name: 96 Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in low lying area.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>90</u> x 5 = <u>450</u> Column Totals: <u>110</u> (A) <u>530</u> (B) Prevalence Index = B/A = <u>4.82</u>
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
		_____	=Total Cover		
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Thinopyrum intermedium</u>	<u>90</u>	<u>Yes</u>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Cirsium arvense</u>	<u>20</u>	<u>No</u>	<u>FACU</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>110</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: SP-311

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-312  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.834974 Long: -120.870004 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in drainage, abundance of rocks.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
_____ = Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
_____ = Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u>Rosa woodsii</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Sisymbrium altissimum</u>	<u>12</u>	<u>No</u>	<u>FACU</u>	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
_____ = Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>40</u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>67</u>	x 4 = <u>268</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>67</u> (A)	<u>268</u> (B)
Prevalence Index = B/A = <u>4.00</u>	

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**Hydrophytic Vegetation Indicators:**

\_\_\_ Dominance Test is >50%

\_\_\_ Prevalence Index is ≤3.0<sup>1</sup>

\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Hydrophytic Vegetation Present?** Yes      No X

Remarks:

**SOIL**

Sampling Point: SP-312

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type: <u>                    </u> Rock <u>                    </u> Depth (inches): <u>                    </u> 6 <u>                    </u>	

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u>	
Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u>	
Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-313  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S11  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.845122 Long: -120.886187 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Confirming no wetland features present. Sample plot in patch of dense vegetation.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus dallasiana</u>	<u>40</u>	Yes	UPL	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. <u>Populus balsamifera</u>	<u>7</u>	No	FAC	
3. <u>    </u>				
4. <u>    </u>				
	<u>47</u> =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Rosa woodsii</u>	<u>25</u>	Yes	FACU	Total % Cover of:                      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>7</u> x 3 = <u>21</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>50</u> x 5 = <u>250</u> Column Totals: <u>82</u> (A) <u>371</u> (B) Prevalence Index = B/A = <u>4.52</u>
2. <u>    </u>				
3. <u>    </u>				
4. <u>    </u>				
5. <u>    </u>				
	<u>25</u> =Total Cover			
Herb Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Pseudoroegneria spicata</u>	<u>10</u>	Yes	UPL	___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>    </u>				
3. <u>    </u>				
4. <u>    </u>				
5. <u>    </u>				
6. <u>    </u>				
7. <u>    </u>				
8. <u>    </u>				
	<u>10</u> =Total Cover			
Woody Vine Stratum (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. <u>    </u>				Yes <u>    </u> No <u>X</u>
2. <u>    </u>				
	=Total Cover			
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>    </u>				

Remarks:

**SOIL**

Sampling Point: SP-313

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Compact Soil</u> Depth (inches): <u>6</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/22/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: SP-314  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S01  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.859847 Long: -120.872855 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Vegetation recovering from burn so unidentifiable. Resurvey in the spring.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Unknown grass</u>	<u>100</u>	<u>Yes</u>	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				<u>100</u> =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>0</u> (A)		<u>0</u> (B)
Prevalence Index = B/A = _____			

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: SP-314

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/4	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b>	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b>	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR D)</b>	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b>	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	
Type: <u>Compact Soil</u>	
Depth (inches): <u>6</u>	
	<b>Hydric Soil Present?      Yes <input type="checkbox"/>      No <input checked="" type="checkbox"/></b>

Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b>	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b>	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b>	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b>
	<input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b>
	<input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b>
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>				
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u>        </u>	<b>Wetland Hydrology Present?      Yes <input type="checkbox"/>      No <input checked="" type="checkbox"/></b>
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u>        </u>	
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u>        </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22

Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-101a

Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E

Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2

Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83

Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)

Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No     

Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
Vernal pool

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					<b>Prevalence Index worksheet:</b> Total % Cover of:                      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>70</u> (A) <u>170</u> (B) Prevalence Index = B/A = <u>2.43</u>
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Navarretia intertexta</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>    </u> Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>Psilocarphus brevissimus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3.	<u>Ceratocephala testiculata</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
4.					
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>60</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: VP-101a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/4	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 2	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
**Vernal pool.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No _____    Depth (inches): _____ Water Table Present?      Yes _____    No _____    Depth (inches): _____ Saturation Present?        Yes _____    No _____    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-101b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
					=Total Cover
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
					=Total Cover
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Ventenata dubia</u>	60	Yes	UPL	
2.	<u>Poa bulbosa</u>	40	Yes	FACU	
3.	<u>Eriogonum niveum</u>	5	No	UPL	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
					105 =Total Cover
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
					=Total Cover
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 65 x 5 = 325  
 Column Totals: 105 (A) 485 (B)  
 Prevalence Index = B/A = 4.62

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-101b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 4/3	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 2	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
--	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No _____    Depth (inches): _____ Water Table Present?      Yes _____ No _____    Depth (inches): _____ Saturation Present?        Yes _____ No _____    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-102a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Vernal pool	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Navarretia intertexta</u>	<u>20</u>	Yes	FACW	
2.	<u>Deschampsia caespitosa</u>	<u>5</u>	Yes	FACW	
3.					
4.					
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>80</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 25 x 2 = 50  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 25 (A)      50 (B)  
 Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

**SOIL**

Sampling Point: VP-102a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/3	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	<b>Hydric Soil Present?</b>
Type: _____ rock	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Depth (inches): _____ 3	

Remarks:  
Vernal pool.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b>
Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-102b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u>	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____					
2. _____					
3. _____					
4. _____					
=Total Cover					
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>15</u> )				
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
=Total Cover					
<u>Herb Stratum</u>	(Plot size: <u>5</u> )				
1. <u>Poa bulbosa</u>		70	Yes	FACU	
2. <u>Ventenata dubia</u>		20	Yes	UPL	
3. <u>Lomatium nudicaule</u>		5	No	UPL	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
95 =Total Cover					
<u>Woody Vine Stratum</u>	(Plot size: _____)				
1. _____					
2. _____					
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 70 x 4 = 280  
 UPL species 25 x 5 = 125  
 Column Totals: 95 (A) 405 (B)  
 Prevalence Index = B/A = 4.26

**Hydrophytic Vegetation Indicators:**  
 \_\_\_\_\_ Dominance Test is >50%  
 \_\_\_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-102b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 3/4	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 5	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No _____    Depth (inches): _____ Water Table Present?      Yes _____ No _____    Depth (inches): _____ Saturation Present?        Yes _____ No _____    Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-107a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: \_\_\_\_\_  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:  
 Small vernal pool between fields.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
=Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
=Total Cover			
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Navarretia intertexta</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
2. <u>Plagiobothrys scouleri</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Convolvulus arvensis</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
=Total Cover			
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
=Total Cover			
% Bare Ground in Herb Stratum <u>50</u>	% Cover of Biotic Crust _____		

<b>Dominance Test worksheet:</b>			
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u>	(A)	
Total Number of Dominant Species Across All Strata:	<u>1</u>	(B)	
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u>	(A/B)	
<b>Prevalence Index worksheet:</b>			
Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>45</u>	x 2 =	<u>90</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>5</u>	x 5 =	<u>25</u>
Column Totals:	<u>50</u>	(A)	<u>115</u>
Prevalence Index = B/A =	<u>2.30</u>		
<b>Hydrophytic Vegetation Indicators:</b>			
<u>X</u> Dominance Test is >50%			
_____ Prevalence Index is ≤3.0 <sup>1</sup>			
_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____			

Remarks:

**SOIL**

Sampling Point: VP-107a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/3	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 4	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
--	--

Remarks:  
Vernal pool.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-107b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
					=Total Cover
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
					=Total Cover
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u><i>Achillea millefolium</i></u>	<u>20</u>	Yes	FACU	
2.	<u><i>Lomatium grayi</i></u>	<u>5</u>	No	UPL	
3.	<u><i>Elymus elymoides</i></u>	<u>20</u>	Yes	FACU	
4.	<u><i>Taeniatherum caput-medusae</i></u>	<u>10</u>	No	UPL	
5.					
6.					
7.					
8.					
					<u>55</u> =Total Cover
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
					=Total Cover
% Bare Ground in Herb Stratum <u>50</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 15 x 5 = 75  
 Column Totals: 55 (A)                      235 (B)  
 Prevalence Index = B/A = 4.27

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-107b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/4	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 4	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-108a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'56.95"N Long: 120°52'45.26"W Datum: NAD83  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Very rocky vernal pool with algal matting on the edge.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>75</u> (A) <u>140</u> (B) Prevalence Index = B/A = <u>1.87</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Plagiobothrys scouleri</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Navarretia intertexta</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Myosurus minimus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>75</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>25</u>		% Cover of Biotic Crust _____		

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
 \_\_\_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: VP-108a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/3	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 4	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks: Vernal pool.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-108b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'56.95"N Long: 120°52'45.26"W Datum: NAD83  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
					=Total Cover
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
					=Total Cover
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u><i>Achillea millefolium</i></u>	<u>30</u>	Yes	FACU	
2.	<u><i>Lomatium grayi</i></u>	<u>10</u>	No	UPL	
3.	<u><i>Elymus elymoides</i></u>	<u>25</u>	Yes	FACU	
4.	<u><i>Madia gracilis</i></u>	<u>20</u>	Yes	UPL	
5.					
6.					
7.					
8.					
					<u>85</u> =Total Cover
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
					=Total Cover
% Bare Ground in Herb Stratum <u>20</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 55 x 4 = 220  
 UPL species 30 x 5 = 150  
 Column Totals: 85 (A)                      370 (B)  
 Prevalence Index = B/A = 4.35

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-108b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/4	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 4	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: \_\_\_\_\_ State: WA Sampling Point: VP-110a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'56.95"N Long: 120°52'45.26"W Datum: NAD83  
 Soil Map Unit Name: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Vernal pool near road.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Plagiobothrys scouleri</u>	30	Yes	FACW	
2. <u>Navarretia intertexta</u>	30	Yes	FACW	
3. <u>Myosurus minimus</u>	10	No	OBL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				70 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust _____		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 10 x 1 = 10  
 FACW species 60 x 2 = 120  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 70 (A) 130 (B)  
 Prevalence Index = B/A = 1.86

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No \_\_\_\_\_

**SOIL**

Sampling Point: VP-110a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	50	10YR 4/6	50	C	M	Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> ? Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 6	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
Vernal pool.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> ? Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: VP-110b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Bromus tectorum</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Ventenata dubia</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>	
3.					
4.					
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>20</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 80 x 5 = 400  
 Column Totals: 80 (A)                      400 (B)  
 Prevalence Index = B/A = 5.00

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?**      Yes           No X

**SOIL**

Sampling Point: VP-110b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/4	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 6	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
--	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-300A  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.835397 Long: -120.895168 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Shallow vernal pool between crop fields.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>160</u> x 2 = <u>320</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>170</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>1.94</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Navarretia intertexta</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Myosurus minimus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
3. <u>Polygonum polygaloides</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>170</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>45</u>		% Cover of Biotic Crust _____		

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: VP-300A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21) Very
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Shallow Dark Surface (F22) X
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>2</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Vernal pool.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mat.

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 10/23/23  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-300B  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Flat Slope (%): 0  
 Subregion (LRR): LRR B Lat: 45.835398 Long: -120.895191 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:  <div style="text-align: center; font-size: 1.2em;">Upland plot for vernal pool</div>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2.	_____	_____	_____	_____																	
3.	_____	_____	_____	_____																	
4.	_____	_____	_____	_____																	
		_____	=Total Cover																		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )																				
1.	_____	_____	_____	_____																	
2.	_____	_____	_____	_____																	
3.	_____	_____	_____	_____																	
4.	_____	_____	_____	_____																	
5.	_____	_____	_____	_____																	
		_____	=Total Cover																		
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>35</u></td> <td>x 5 = <u>175</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>515</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.29</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>35</u>	x 5 = <u>175</u>	Column Totals: <u>120</u> (A)	<u>515</u> (B)	Prevalence Index = B/A = <u>4.29</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>0</u>	x 3 = <u>0</u>																				
FACU species <u>85</u>	x 4 = <u>340</u>																				
UPL species <u>35</u>	x 5 = <u>175</u>																				
Column Totals: <u>120</u> (A)	<u>515</u> (B)																				
Prevalence Index = B/A = <u>4.29</u>																					
1.	<u>Ventenata dubia</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>																	
2.	<u>Poa secunda</u>	<u>75</u>	<u>Yes</u>	<u>FACU</u>																	
3.	<u>Tragopogon dubia</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
4.	_____	_____	_____	_____																	
5.	_____	_____	_____	_____																	
6.	<u>Sisymbrium altissimum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
7.	_____	_____	_____	_____																	
8.	_____	_____	_____	_____																	
		<u>120</u>	=Total Cover																		
Woody Vine Stratum	(Plot size: <u>5ft</u> )																				
1.	_____	_____	_____	_____																	
2.	_____	_____	_____	_____																	
		_____	=Total Cover																		
% Bare Ground in Herb Stratum <u>45</u>		% Cover of Biotic Crust <u>    </u>																			

Remarks:

**SOIL**

Sampling Point: VP-300B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
Vernal pool.

**HYDROLOGY**

Wetland Hydrology Indicators:		Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-103a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Wetland along fence near road.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>70</u> x 2 = <u>140</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>2.22</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 <sup>1</sup> ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ =Total Cover	<u>90</u>	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>0</u>	% Cover of Biotic Crust _____	_____	_____	

Remarks:

**SOIL**

Sampling Point: WT-103a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-14	10YR 2/2	100					Loamy/Clayey	clay loam
14-16	10YR 4/1	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)			
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> ? Reduced Vertic (F18)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> ? Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-103b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Rockly-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Taeniatherum caput-medusae</u>	<u>100</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Bromus japonicus</u>	<u>80</u>	<u>Yes</u>	<u>FACU</u>	
3.	<u>Tragopogon porrifolius</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
4.					
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 80 x 4 = 320  
 UPL species 105 x 5 = 525  
 Column Totals: 185 (A)                      845 (B)  
 Prevalence Index = B/A = 4.57

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-103b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/1	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-104a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Riverine wetland, with obligate plants in the channel.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
					=Total Cover
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
					=Total Cover
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Myosurus minimus</u>	60	Yes	OBL	
2.	<u>Plagiobothrys scouleri</u>	20	Yes	FACW	
3.	<u>Eleocharis palustris</u>	15	No	OBL	
4.	<u>Juncus balticus</u>	15	No	FACW	
5.	<u>Rorippa curvisiliqua</u>	5	No	OBL	
6.	<u>Rumex crispus</u>	5	No	FAC	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
					120 =Total Cover
Woody Vine Stratum	(Plot size: _____)				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
					=Total Cover
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 80 x 1 = 80  
 FACW species 35 x 2 = 70  
 FAC species 5 x 3 = 15  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 120 (A) 165 (B)  
 Prevalence Index = B/A = 1.38

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

**SOIL**

Sampling Point: WT-104a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	80	10YR 4/6	20	C	M	Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> ? Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> rock Depth (inches): <u>          </u> 4	<b>Hydric Soil Present?</b> Yes <u>  X  </u> No <u>      </u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> ? Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Water Table Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Saturation Present?      Yes <u>  X  </u> No <u>      </u> Depth (inches): <u>      </u> 2 (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>  X  </u> No <u>      </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/27/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-104b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
					=Total Cover
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
					=Total Cover
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Lomatium nudicaule</u>	<u>5</u>	No	UPL	
2.	<u>Eriogonum compositum</u>	<u>15</u>	No	UPL	
3.	<u>Bromus inermis</u>	<u>10</u>	No	FACU	
4.	<u>Bromus tectorum</u>	<u>20</u>	Yes	UPL	
5.	<u>Centaurea cyanus</u>	<u>40</u>	Yes	FACU	
6.	<u>Tragopogon porrifolius</u>	<u>5</u>	No	UPL	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
					95 =Total Cover
Woody Vine Stratum	(Plot size: _____)				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
					=Total Cover
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 50 x 4 = 200  
 UPL species 45 x 5 = 225  
 Column Totals: 95 (A) 425 (B)  
 Prevalence Index = B/A = 4.47

**Hydrophytic Vegetation Indicators:**  
 \_\_\_\_\_ Dominance Test is >50%  
 \_\_\_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No X

**SOIL**

Sampling Point: WT-104b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/3	100					Loamy/Clayey	silt loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-105a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 Riverine wetland/wet meadow. Obligate plants in channel, damp soils, fully vegetated, multiple relic channels.

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>260</u> (B) Prevalence Index = B/A = <u>2.36</u>
1. _____					
2. _____					
3. _____					
4. _____					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Equisetum hyemale</u>		10	No	FACW	
2. <u>Plagiobothrys scouleri</u>		10	No	FACW	
3. <u>Phleum pratense</u>		20	No	FACU	
4. <u>Juncus ensifolius</u>		70	Yes	FACW	
5. _____					
6. _____					
7. _____					
8. _____					
110 =Total Cover					
Woody Vine Stratum	(Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
1. _____					
2. _____					
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: WT-105a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/1	70	10YR 3/6	30	C	M	Loamy/Clayey	clay with sand inclusion

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input checked="" type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 12	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____		
Water Table Present?      Yes _____      No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present?      Yes <input checked="" type="checkbox"/> No _____      Depth (inches):      6		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-105b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u><i>Equisetum hyemale</i></u>	<u>15</u>	<u>No</u>	<u>FACW</u>	
2.	<u><i>Convolvulus arvensis</i></u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
3.	<u><i>Tragopogon porrifolius</i></u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
4.	<u><i>Achillea millefolium</i></u>	<u>15</u>	<u>No</u>	<u>FACU</u>	
5.	<u><i>Medicago sativa</i></u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>	
6.	<u><i>Taeniatherum caput-medusae</i></u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>	
7.					
8.					
=Total Cover					
<u>110</u>					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
=Total Cover					
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 15 x 2 = 30  
 FAC species 0 x 3 = 0  
 FACU species 15 x 4 = 60  
 UPL species 80 x 5 = 400  
 Column Totals: 110 (A)                      490 (B)  
 Prevalence Index = B/A = 4.45

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-105b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 3/2	100					Loamy/Clayey	sandy loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 10	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-106a  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Artificially created pond. Berm in wet meadow.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>125</u> (A) <u>225</u> (B) Prevalence Index = B/A = <u>1.80</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 <sup>1</sup> ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Plagiobothrys scouleri</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Equisetum hyemale</u>	<u>10</u>	<u>No</u>	<u>FACW</u>	
4. <u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. <u>Eleocharis palustris</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ =Total Cover	<u>125</u>	_____	_____	
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>0</u>	% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: WT-106a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 2/1	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> ? Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 6/28/22  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-106b  
 Investigator(s): Jessica Taylor and Katie Pyne Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45°50'47.31"N Long: 120°52'29.70"W Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Bromus japonicus</u>	80	Yes	FACU	
2.	<u>Achillea millefolium</u>	10	No	FACU	
3.	<u>Taeniatherum caput-medusae</u>	10	No	UPL	
4.					
5.					
6.					
7.					
8.					
100 =Total Cover					
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 90 x 4 = 360  
 UPL species 10 x 5 = 50  
 Column Totals: 100 (A)                      410 (B)  
 Prevalence Index = B/A = 4.10

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-106b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/2	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ rock Depth (inches): _____ 4	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-107a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832776 Long: -120.868119 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Depression adjacent to agricultural fields.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus tenuis</u>	80	Yes	FACW	
2. <u>Camassia quamash</u>	10	No	FACW	
3. <u>Achillea millefolium</u>	5	No	FACU	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				95 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>90</u>	x 2 =	<u>180</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>5</u>	x 4 =	<u>20</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>95</u> (A)		<u>200</u> (B)
Prevalence Index = B/A =			<u>2.11</u>

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

**SOIL**

Sampling Point: WT-107a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>8</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:  
Disturbed soils due to agriculture proximity.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed throughout WT-107.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024

Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-107b

Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): Flat Slope (%): 0

Subregion (LRR): LRR B Lat: 45.834273 Long: -120.869158 Datum: WGS 84

Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)

Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No     

Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
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Remarks:  
Upland representative plot for WT-107 located in an agriculture field.

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
_____ =Total Cover					
Woody Vine Stratum	(Plot size: <u>15</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
1. _____					
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: WT-107b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-107c  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832776 Long: -120.868119 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>    </u> No <u>X</u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	

Remarks:  
 Confirmation plot for representative upland conditions for WT-107. Animal burrows observed throughout.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species <u>55</u> x 5 = <u>275</u> Column Totals: <u>100</u> (A) <u>455</u> (B) Prevalence Index = B/A = <u>4.55</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Delphinium nuttallii</u>	<u>15</u>	<u>No</u>	<u>FACU</u>	
2. <u>Lomatium nudicaule</u>	<u>15</u>	<u>No</u>	<u>UPL</u>	
3. <u>Bromus tectorum</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	
4. <u>Poa secunda</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
5. <u>Collinsia parviflora</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: WT-107c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Sandy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-108a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832463 Long: -120.867984 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Wetland 108 within a narrow waterway, slightly depressed.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>110</u> (B) Prevalence Index = B/A = <u>2.00</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	_____	_____	_____	=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Plagiobothrys scouleri</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Myosurus minimus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____	<u>55</u>	_____	_____	
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____	_____	_____	_____	=Total Cover
% Bare Ground in Herb Stratum <u>45</u>	% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: WT-108a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          3          </u>	<b>Hydric Soil Present?</b> Yes <u>      </u> No <u>  X  </u>
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Remarks:  
Disturbed soils due to active agriculture nearby.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>  X  </u> No <u>      </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-108b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR): LRR B Lat: 45.832474 Long: -120.868053 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for WT-108.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Sisymbrium altissimum</u>	15	No	FACU	
2. <u>Achillea millefolium</u>	10	No	FACU	
3. <u>Poa secunda</u>	30	Yes	FACU	
4. <u>Lithophragma parviflorum</u>	10	No	UPL	
5. <u>Bromus tectorum</u>	35	Yes	UPL	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				100 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>55</u>	x 4 =	<u>220</u>
UPL species	<u>45</u>	x 5 =	<u>225</u>
Column Totals:	<u>100</u> (A)		<u>445</u> (B)
Prevalence Index = B/A =			<u>4.45</u>

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-108b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>5</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-109a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.831933 Long: -120.869101 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Small depressional wetland bordered by agricultural field and upland vegetation.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>90</u> (A) <u>255</u> (B) Prevalence Index = B/A = <u>2.83</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Camassia quamash</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Poa secunda</u>	<u>15</u>	<u>No</u>	<u>FACU</u>	
3. <u>Bromus tectorum</u>	<u>15</u>	<u>No</u>	<u>UPL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>90</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>    </u>		

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: WT-109a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          8          </u>	<b>Hydric Soil Present?</b> Yes <u>      </u> No <u>  X  </u>
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Remarks:  
Disturbed soils due to proximity of active agriculture.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>  X  </u> No <u>      </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-109b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.831873 Long: -120.869065 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland representative plot for wetland 109.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Delphinium nuttallii</u>	20	Yes	FACU	
2. <u>Lomatium nudicaule</u>	10	No	UPL	
3. <u>Eriogonum ovalifolium</u>	5	No	FACU	
4. <u>Poa secunda</u>	30	Yes	FACU	
5. <u>Bromus tectorum</u>	30	Yes	UPL	
6. <u>Achillea millefolium</u>	5	No	FACU	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				100 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>60</u>	x 4 =	<u>240</u>
UPL species	<u>40</u>	x 5 =	<u>200</u>
Column Totals:	<u>100</u> (A)		<u>440</u> (B)
Prevalence Index = B/A =			<u>4.40</u>

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-109b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR D)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b>	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:  
Problematic soils due to disturbance from agriculture.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b>
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b>
<input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b>	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b>	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b>	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 4/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-110a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.873712 Long: -120.874381 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Recent fire, trees burned and cut down in places. Depression/swale at road edge. Confirmation plot of wetland conditions.

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>65</u> (A) <u>165</u> (B) Prevalence Index = B/A = <u>2.54</u>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
				=Total Cover	
Herb Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	<u>Cirsium arvense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Camassia quamash</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
3.	<u>Wyethia amplexicaulis</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
4.	<u>Montia fontana</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
				<u>65</u> =Total Cover	
Woody Vine Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
				=Total Cover	
% Bare Ground in Herb Stratum <u>35</u>		% Cover of Biotic Crust <u>    </u>			

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: WT-110a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100					Loamy/Clayey	Silt Loam
8-16	10YR 2/1	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u> Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 4/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-110b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): hill Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.874096 Long: -120.874413 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Recent fire, trees burned and cut down in places. Upland representative plot.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																																
2. _____																																					
3. _____																																					
4. _____																																					
				=Total Cover																																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																					
1. <u>Symphoricarpos albus</u>		40	Yes	FACU	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td align="center">x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td align="center">x 2 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td align="center">x 3 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>40</u></td> <td align="center">x 4 =</td> <td align="center"><u>160</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>50</u></td> <td align="center">x 5 =</td> <td align="center"><u>250</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>90</u> (A)</td> <td></td> <td align="center"><u>410</u> (B)</td> </tr> <tr> <td></td> <td align="center" colspan="3">Prevalence Index = B/A = <u>4.56</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>0</u>	x 3 =	<u>0</u>	FACU species	<u>40</u>	x 4 =	<u>160</u>	UPL species	<u>50</u>	x 5 =	<u>250</u>	Column Totals:	<u>90</u> (A)		<u>410</u> (B)		Prevalence Index = B/A = <u>4.56</u>		
Total % Cover of:		Multiply by:																																			
OBL species	<u>0</u>	x 1 =	<u>0</u>																																		
FACW species	<u>0</u>	x 2 =	<u>0</u>																																		
FAC species	<u>0</u>	x 3 =	<u>0</u>																																		
FACU species	<u>40</u>	x 4 =	<u>160</u>																																		
UPL species	<u>50</u>	x 5 =	<u>250</u>																																		
Column Totals:	<u>90</u> (A)		<u>410</u> (B)																																		
	Prevalence Index = B/A = <u>4.56</u>																																				
2. _____																																					
3. _____																																					
4. _____																																					
5. _____																																					
		40		=Total Cover																																	
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )																																					
1. <u>Anthriscus caucalis</u>		50	Yes	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. _____																																					
3. _____																																					
4. _____																																					
5. _____																																					
6. _____																																					
7. _____																																					
8. _____																																					
		50		=Total Cover																																	
<b>Woody Vine Stratum</b> (Plot size: <u>5ft</u> )																																					
1. _____					<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>    </u>																																
2. _____																																					
				=Total Cover																																	
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>    </u>																																			
Remarks:																																					

**SOIL**

Sampling Point: WT-110b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No _____
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u> X </u> Depth (inches): _____ Water Table Present?      Yes _____    No <u> X </u> Depth (inches): _____ Saturation Present?        Yes _____    No <u> X </u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 4/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-110c  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): hill Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.874052 Long: -120.874359 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Recent fire, trees burned and cut down in places. Upland representative plot.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____																					
3. _____																					
4. _____																					
				=Total Cover																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																					
1. <u>Symphoricarpos albus</u>		35	Yes	FACU	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td>x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>65</u> (A)</td> <td><u>290</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.46</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>30</u>	x 5 = <u>150</u>	Column Totals: <u>65</u> (A)	<u>290</u> (B)	Prevalence Index = B/A = <u>4.46</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>0</u>	x 2 = <u>0</u>																				
FAC species <u>0</u>	x 3 = <u>0</u>																				
FACU species <u>35</u>	x 4 = <u>140</u>																				
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2. _____																					
3. _____																					
4. _____																					
5. _____																					
		35		=Total Cover																	
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )																					
1. <u>Anthriscus caucalis</u>		30	Yes	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____																					
3. _____																					
4. _____																					
5. _____																					
6. _____																					
7. _____																					
8. _____																					
		30		=Total Cover																	
<b>Woody Vine Stratum</b> (Plot size: <u>5ft</u> )																					
1. _____					<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>    </u>																
2. _____																					
				=Total Cover																	
% Bare Ground in Herb Stratum <u>35</u>		% Cover of Biotic Crust <u>    </u>																			

Remarks:

**SOIL**

Sampling Point: WT-110c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No _____
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 4/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-110d  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3  
 Subregion (LRR): LRR B Lat: 45.874028 Long: -120.874322 Datum: WGS 84  
 Soil Map Unit Name: 97 Munset stony silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Recent fire, trees burned and cut down in places. Wetland confirmation plot.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.	<u><i>Symphoricarpos albus</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				
1.	<u><i>Cirsium arvense</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
2.	<u><i>Camassia quamash</i></u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
3.	<u><i>Juncus tenuis</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	
4.					
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>    </u>			

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>40</u> (A)	<u>110</u> (B)
Prevalence Index = B/A = <u>2.75</u>	

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: WT-110d

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-20	10YR 2/1	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>13</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/26/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-111a  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): LRR B Lat: 45.826091 Long: -120.888404 Datum: WGS 84  
 Soil Map Unit Name: 96: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Wetland field dominated by reed canary grass. Likely spring fed due to the observed water table.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____ 2. _____ 3. _____ 4. _____ =Total Cover	_____	_____	_____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	_____	_____	_____	
1. _____ 2. _____ 3. _____ 4. _____ 5. _____ =Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	_____	_____	_____	
1. <u>Phalaris arundinacea</u> <u>80</u> Yes <u>FACW</u> 2. <u>Myosurus minimus</u> <u>15</u> No <u>OBL</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ =Total Cover	<u>80</u> <u>15</u> _____	<u>Yes</u> <u>No</u> _____	<u>FACW</u> <u>OBL</u> _____	
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>    </u> Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____ 2. _____ =Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>

Remarks:

Remarks:

**SOIL**

Sampling Point: WT-111a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/26/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-111b  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Hill Local relief (concave, convex, none): Convex Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.826040 Long: -120.888170 Datum: WGS 84  
 Soil Map Unit Name: 25A: Leidi extremely cobbly ashy loam, 2 to 30 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland representative plot for Wetland 111.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )				
1. <u>Symphoricarpos albus</u>	15	Yes	FACU	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				15 =Total Cover
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )				
1. <u>Taraxacum officinale</u>	10	Yes	FACU	
2. <u>Collinsia parviflora</u>	7	No	UPL	
3. <u>Cirsium arvense</u>	5	No	FACU	
4. <u>Bromus tectorum</u>	25	Yes	UPL	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				47 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust _____		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>30</u>	x 4 =	<u>120</u>
UPL species	<u>32</u>	x 5 =	<u>160</u>
Column Totals:	<u>62</u> (A)		<u>280</u> (B)
Prevalence Index = B/A =			<u>4.52</u>

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: WT-111b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Ashy Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
---	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/26/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-111c  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.826193 Long: -120.889241 Datum: WGS 84  
 Soil Map Unit Name: 96: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Wetland field dominated by reed canary grass. Likely spring fed due to the observed water table.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>80</u> x 2 = <u>160</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>195</u> (B) Prevalence Index = B/A = <u>1.95</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	1. <u>Phalaris arundinacea</u>	<u>80</u>	<u>Yes</u> <u>FACW</u>	
2. <u>Myosurus minimus</u>	<u>15</u>	<u>No</u> <u>OBL</u>		
3. <u>Cirsium arvense</u>	<u>5</u>	<u>No</u> <u>FACU</u>		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: WT-111c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/26/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-111d  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.826315 Long: -120.890833 Datum: WGS 84  
 Soil Map Unit Name: 96: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Representative plot for the conditions in the riverine wetland portion of Wetland 111.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>75</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>2.00</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	_____	_____	_____	
1. <u>Juncus tenuis</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Phalaris arundinacea</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
<u>75</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	_____	_____	_____	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>25</u>	% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: WT-111d

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/26/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: WT-111e  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S36  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.826260 Long: -120.890828 Datum: WGS 84  
 Soil Map Unit Name: 96: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>    </u> No <u>X</u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	

Remarks:  
 Upland representative plot for riverine portion of Wetland 111.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. <u>Pinus ponderosa</u>	<u>5</u>	Yes	FACU	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
4. _____	_____	_____	_____	
	<u>5</u> =Total Cover			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>20</u> x 4 = <u>80</u>
	_____ =Total Cover			UPL species <u>41</u> x 5 = <u>205</u>
				Column Totals: <u>61</u> (A) <u>285</u> (B)
				Prevalence Index = B/A = <u>4.67</u>
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b>
1. <u>Achillea millefolium</u>	<u>15</u>	Yes	FACU	
2. <u>Bromus tectorum</u>	<u>25</u>	Yes	UPL	_____ Prevalence Index is ≤3.0 <sup>1</sup>
3. <u>Collinsia parviflora</u>	<u>8</u>	No	UPL	_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. <u>Lithophragma parviflorum</u>	<u>8</u>	No	UPL	_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
	<u>56</u> =Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	_____ =Total Cover			
% Bare Ground in Herb Stratum <u>3</u>	% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: WT-111e

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/15/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-301a  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.833673 Long: -120.867432 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/a  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Shallow vernal pool depression.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>160</u> x 2 = <u>320</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>170</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>1.94</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Montia linearis</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
2. <u>Myosurus minimus</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Plagiobothrys scouleri</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>170</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>40</u>		% Cover of Biotic Crust _____		

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: VP-301A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/3	100					Loamy/Clayey	Clay Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21) Very
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Shallow Dark Surface (F22) X
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>2</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils; vernal pool.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/15/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-301b  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 7  
 Subregion (LRR): LRR B Lat: 45.833656 Long: -120.867462 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: <u>Upland plot for vernal pool</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
		_____	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>35</u> x 5 = <u>175</u> Column Totals: <u>120</u> (A) <u>515</u> (B) Prevalence Index = B/A = <u>4.29</u>
1.	<u>Poa bulbosa</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>	
2.	<u>Poa secunda</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	
3.	<u>Draba verna</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
4.	<u>Collinsia parviflora</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
5.	<u>Delphinium nutalli</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
		<u>120</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
		_____	=Total Cover		
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>    </u>					<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>

Remarks: \_\_\_\_\_

**SOIL**

Sampling Point: VP-301B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 3/4	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock restriction</u> Depth (inches): <u>8</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/15/2024

Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-302a

Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S14

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): LRR B Lat: 45.834262 Long: -120.866779 Datum: WGS 84

Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No     

Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 Shallow vernal pool depression.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. <u>Myosurus minimus</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Plagiobothrys scouleri</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>170</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>20</u>		% Cover of Biotic Crust _____		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>160</u>	x 2 = <u>320</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>170</u> (A)	<u>330</u> (B)
Prevalence Index = B/A = <u>1.94</u>	

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: VP-302A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21) Very
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Shallow Dark Surface (F22) X
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>5</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils; vernal pool.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/15/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-302b  
 Investigator(s): Summer Roberts Section, Township, Range: T4-0N R15-0E S14  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR): LRR B Lat: 45.834251 Long: -120.866724 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: <u>Upland plot for vernal pool. Vegetation and soil are disturbed from agriculture.</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____					Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>5ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>35</u> x 5 = <u>175</u> Column Totals: <u>120</u> (A) <u>515</u> (B) Prevalence Index = B/A = <u>4.29</u>
1. _____					
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Poa secunda</u>		<u>5</u>	<u>No</u>	<u>UPL</u>	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
<u>120</u> =Total Cover					
Woody Vine Stratum	(Plot size: <u>5ft</u> )				
1. _____					
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>95</u>		% Cover of Biotic Crust <u>    </u>			

Remarks: \_\_\_\_\_

**SOIL**

Sampling Point: VP-302B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
Remarks:	

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-303a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.836021 Long: -120.865124 Datum: WGS 84  
 Soil Map Unit Name: 69 Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 Vernal pool adjacent to agricultural field.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Plagiobothrys scouleri</u>	50	Yes	FACW	
2. <u>Myosurus minimus</u>	30	Yes	OBL	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				80 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>20</u>		% Cover of Biotic Crust <u>    </u>		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>30</u>	x 1 = <u>30</u>
FACW species <u>50</u>	x 2 = <u>100</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>80</u> (A)	<u>130</u> (B)
Prevalence Index = B/A = <u>1.63</u>	

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: VP-303a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 2/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          3          </u>	<b>Hydric Soil Present?</b> Yes <u>  X  </u> No <u>      </u>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> ? Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Water Table Present?     Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> Saturation Present?       Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>  X  </u> No <u>      </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 4/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-303b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.836031 Long: -120.865067 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>    </u> No <u>X</u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	

Remarks:  
 Recent fire, trees burned and cut down in places. Depression/swale at road edge. Confirmation plot of wetland conditions.  
 Plot shows upland conditions outside of wetland.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>5ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>110</u> (A) <u>480</u> (B) Prevalence Index = B/A = <u>4.36</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5ft</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft</u> )	1. <u>Lomatium nudicaule</u>	<u>20</u>	<u>No</u> <u>UPL</u>	
2. <u>Poa secunda</u>	<u>70</u>	<u>Yes</u> <u>FACU</u>		
3. <u>Bromus tectorum</u>	<u>20</u>	<u>No</u> <u>UPL</u>		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>110</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>5ft</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: VP-303b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR D)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b>	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type: <u>                    </u> Rock restriction Depth (inches): <u>                    </u> 8	

Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b>
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b>
<input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b>	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b>	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b>	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u> Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u> Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-304a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832776 Long: -120.868119 Datum: WGS 84  
 Soil Map Unit Name: 69: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 Vernal pool within swale adjacent to agricultural field.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Myosurus minimus</u>	25	Yes	OBL	
2. <u>Plagiobothrys scouleri</u>	30	Yes	FACW	
3. <u>Poa bulbosa</u>	10	No	FACU	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
65 =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust _____		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>25</u>	x 1 = <u>25</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>65</u> (A)	<u>125</u> (B)
Prevalence Index = B/A = <u>1.92</u>	

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: VP-304a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input checked="" type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>2</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-305a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.831903 Long: -120.867528 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Isolated depression surrounded by upland vegetation.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>50</u> (A) <u>100</u> (B) Prevalence Index = B/A = <u>2.00</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	1. <u>Myosurus minimus</u>	<u>20</u>	<u>Yes</u> <u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>20</u>	<u>Yes</u> <u>FACW</u>		
3. <u>Poa secunda</u>	<u>10</u>	<u>Yes</u> <u>FACU</u>		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: VP-305a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR D)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b>	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          3          </u>	<b>Hydric Soil Present?</b> Yes <u>  X  </u> No <u>      </u>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b>
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b>
<input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b>	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b>	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b>	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	
Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u>	<b>Wetland Hydrology Present?</b> Yes <u>  X  </u> No <u>      </u>
Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u>	
Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>      </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-306a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.831811 Long: -120.867307 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Isolated depression surrounded by upland vegetation.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of:                      Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>105</u> (B) Prevalence Index = B/A = <u>1.91</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Myosurus minimus</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>55</u> =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>35</u> % Cover of Biotic Crust <u>    </u>				

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No     

Remarks:

**SOIL**

Sampling Point: VP-306a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>3</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-306b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.831800 Long: -120.867308 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for VP-306.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lithophragma parviflorum</u>	<u>15</u>	No	UPL	
2. <u>Lomatium nudicaule</u>	<u>10</u>	No	UPL	
3. <u>Poa secunda</u>	<u>30</u>	Yes	FACU	
4. <u>Bromus tectorum</u>	<u>30</u>	Yes	UPL	
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
				<u>85</u> =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
				=Total Cover
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust _____		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>30</u>	x 4 =	<u>120</u>
UPL species	<u>55</u>	x 5 =	<u>275</u>
Column Totals:	<u>85</u> (A)		<u>395</u> (B)
Prevalence Index = B/A =			<u>4.65</u>

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-306b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b>
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR D)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b>	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type: <u>                    </u> Rock Restriction Depth (inches): <u>                    7                    </u>	

Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b>
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b>
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b>
<input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b>	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b>	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b>	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u>	
Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u>	
Saturation Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>                    </u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-307a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.833535 Long: -120.867260 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Isolated depression surrounded by upland vegetation and agriculture fields.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	=Total Cover
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>70</u> (A) <u>140</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <u>Myosurus minimus</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Bromus tectorum</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				=Total Cover <u>70</u>
<b>Woody Vine Stratum</b> (Plot size: <u>15</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover _____
% Bare Ground in Herb Stratum <u>35</u>		% Cover of Biotic Crust _____		

Remarks:

**SOIL**

Sampling Point: VP-307a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>	
Type: <u>                    </u> Rock Restriction	
Depth (inches): <u>          4          </u>	
	<b>Hydric Soil Present?      Yes <u>  X  </u>    No <u>      </u></b>

Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	
Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u>	
Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u>	
Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u>	
(includes capillary fringe)	<b>Wetland Hydrology Present?    Yes <u>  X  </u>    No <u>      </u></b>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-310a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832282 Long: -120.866745 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Depressional vernal pool.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>130</u> (B) Prevalence Index = B/A = <u>1.86</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	1. <u>Myosurus minimus</u>	<u>30</u>	<u>Yes</u> <u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>30</u>	<u>Yes</u> <u>FACW</u>		
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u> <u>FACU</u>		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust _____		

Remarks:

**SOIL**

Sampling Point: VP-310a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>3</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-310b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.832275 Long: -120.866736 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for VP-310.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lithophragma parviflorum</u>	10	No	UPL	
2. <u>Lomatium nudicaule</u>	10	No	UPL	
3. <u>Poa secunda</u>	40	Yes	FACU	
4. <u>Bromus tectorum</u>	40	Yes	UPL	
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
				100 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
				=Total Cover
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>40</u>	x 4 =	<u>160</u>
UPL species	<u>60</u>	x 5 =	<u>300</u>
Column Totals:	<u>100</u> (A)		<u>460</u> (B)
Prevalence Index = B/A =			<u>4.60</u>

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-310b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>7</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-311a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.832606 Long: -120.866466 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Depressional vernal pool.  
 Vegetation and soil are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>105</u> (B) Prevalence Index = B/A = <u>1.91</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 <sup>1</sup> ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Myosurus minimus</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ =Total Cover	<u>55</u>	_____	_____	
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ =Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>35</u>	% Cover of Biotic Crust _____			

Remarks:

**SOIL**

Sampling Point: VP-311a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>3</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-311b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.832596 Long: -120.866472 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for VP-311.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					
2.					
3.					
4.					
=Total Cover					
Sapling/Shrub Stratum	(Plot size: <u>15</u> )				
1.					
2.					
3.					
4.					
5.					
=Total Cover					
Herb Stratum	(Plot size: <u>5</u> )				
1.	<u>Collinsia parviflora</u>	<u>15</u>	<u>No</u>	<u>UPL</u>	
2.	<u>Lomatium nudicaule</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
3.	<u>Poa secunda</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
4.	<u>Bromus tectorum</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	
5.					
6.					
7.					
8.					
=Total Cover					
Woody Vine Stratum	(Plot size: <u>15</u> )				
1.					
2.					
=Total Cover					
% Bare Ground in Herb Stratum <u>8</u>		% Cover of Biotic Crust <u>    </u>			
Remarks:					

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>55</u>	x 5 = <u>275</u>
Column Totals: <u>85</u> (A)	<u>395</u> (B)
Prevalence Index = B/A = <u>4.65</u>	

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-311b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          10          </u>	<b>Hydric Soil Present?</b> Yes <u>      </u> No <u>  X  </u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>      </u> No <u>  X  </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-312a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): LRR B Lat: 45.833010 Long: -120.866234 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Isolated depression surrounded by upland vegetation.  
 Vegetation and soil of vernal pool are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>35</u> x 1 = <u>35</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>75</u> (A) <u>135</u> (B) Prevalence Index = B/A = <u>1.80</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	1. <u>Myosurus minimus</u>	<u>35</u>	<u>Yes</u> <u>OBL</u>	
2. <u>Plagiobothrys scouleri</u>	<u>30</u>	<u>Yes</u> <u>FACW</u>		
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u> <u>FACU</u>		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: VP-312a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>4</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024

Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-312b

Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13

Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4

Subregion (LRR): LRR B Lat: 45.833009 Long: -120.866202 Datum: WGS 84

Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)

Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No     

Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Hydric Soil Present? Yes <u>    </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	

Remarks:  
 Representative upland plot for VP-312.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>55</u> x 5 = <u>275</u> Column Totals: <u>90</u> (A) <u>415</u> (B) Prevalence Index = B/A = <u>4.61</u>
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u> )	1. <u>Lithophragma parviflorum</u>	<u>15</u>	<u>No</u> <u>UPL</u>	
2. <u>Lomatium nudicaule</u>	<u>10</u>	<u>No</u> <u>UPL</u>		
3. <u>Poa secunda</u>	<u>30</u>	<u>Yes</u> <u>FACU</u>		
4. <u>Bromus tectorum</u>	<u>30</u>	<u>Yes</u> <u>UPL</u>		
5. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u> <u>FACU</u>		
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	1. _____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		

Remarks:

**SOIL**

Sampling Point: VP-312b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          7          </u>	<b>Hydric Soil Present?</b> Yes <u>      </u> No <u>  X  </u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>      </u> No <u>  X  </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-313a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3  
 Subregion (LRR): LRR B Lat: 45.833031 Long: -120.866437 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Isolated depression surrounded by upland vegetation.  
 Vegetation and soil of vernal pool are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____	=Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of:                      Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>55</u> (A) <u>105</u> (B) Prevalence Index = B/A = <u>1.91</u>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1. <u>Myosurus minimus</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>		
2. <u>Plagiobothrys scouleri</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>		
3. <u>Poa secunda</u>	<u>10</u>	<u>No</u>	<u>FACU</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		=Total Cover
55					
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		=Total Cover
% Bare Ground in Herb Stratum <u>30</u>	% Cover of Biotic Crust _____				

Remarks:

**SOIL**

Sampling Point: VP-313a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>3</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Algal mats observed.

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-313b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.833034 Long: -120.866404 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for VP-313.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Achillea millefolium</u>	15	No	FACU	
2. <u>Lomatium nudicaule</u>	10	No	UPL	
3. <u>Poa secunda</u>	30	Yes	FACU	
4. <u>Bromus tectorum</u>	30	Yes	UPL	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				85 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>45</u>	x 4 =	<u>180</u>
UPL species	<u>40</u>	x 5 =	<u>200</u>
Column Totals:	<u>85</u> (A)		<u>380</u> (B)
Prevalence Index = B/A =			<u>4.47</u>

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-313b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-9	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>                    </u> Rock Restriction Depth (inches): <u>          9          </u>	<b>Hydric Soil Present?</b> Yes <u>      </u> No <u>  X  </u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Water Table Present?      Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> Saturation Present?        Yes <u>      </u> No <u>  X  </u> Depth (inches): <u>          </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>      </u> No <u>  X  </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-314a  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.833416 Long: -120.867095 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil X, or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 Isolated depression surrounded by upland vegetation and agricultural fields.  
 Vegetation and soil of vernal pool are disturbed due to proximity of active agricultural fields and grazing.

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. _____					<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																								
2. _____																													
3. _____																													
4. _____																													
=Total Cover																													
Sapling/Shrub Stratum	(Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. _____					<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:30%; text-align: center;">Total % Cover of:</td> <td style="width:30%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>30</u></td> <td style="text-align: center;">x 1 = <u>30</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>30</u></td> <td style="text-align: center;">x 2 = <u>60</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: center;">x 3 = <u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>5</u></td> <td style="text-align: center;">x 4 = <u>20</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: center;">x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>65</u> (A)</td> <td style="text-align: center;"><u>110</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align: center;">Prevalence Index = B/A = <u>1.69</u></td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species	<u>30</u>	x 1 = <u>30</u>	FACW species	<u>30</u>	x 2 = <u>60</u>	FAC species	<u>0</u>	x 3 = <u>0</u>	FACU species	<u>5</u>	x 4 = <u>20</u>	UPL species	<u>0</u>	x 5 = <u>0</u>	Column Totals:	<u>65</u> (A)	<u>110</u> (B)	Prevalence Index = B/A = <u>1.69</u>		
	Total % Cover of:	Multiply by:																											
OBL species	<u>30</u>	x 1 = <u>30</u>																											
FACW species	<u>30</u>	x 2 = <u>60</u>																											
FAC species	<u>0</u>	x 3 = <u>0</u>																											
FACU species	<u>5</u>	x 4 = <u>20</u>																											
UPL species	<u>0</u>	x 5 = <u>0</u>																											
Column Totals:	<u>65</u> (A)	<u>110</u> (B)																											
Prevalence Index = B/A = <u>1.69</u>																													
2. _____																													
3. _____																													
4. _____																													
5. _____																													
=Total Cover																													
Herb Stratum	(Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. <u>Myosurus minimus</u>		<u>30</u>	Yes	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. <u>Plagiobothrys scouleri</u>		<u>30</u>	Yes	FACW																									
3. <u>Poa secunda</u>		<u>5</u>	No	FACU																									
4. _____																													
5. _____																													
6. _____																													
7. _____																													
8. _____																													
<u>65</u> =Total Cover																													
Woody Vine Stratum	(Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. _____					<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>																								
2. _____																													
=Total Cover																													
% Bare Ground in Herb Stratum <u>40</u>		% Cover of Biotic Crust <u>    </u>																											

Remarks:

**SOIL**

Sampling Point: VP-314a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 4/3	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>2</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Seasonally ponded soils.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar, LLC City/County: Klickitat Sampling Date: 04/25/2024  
 Applicant/Owner: Cypress Creek Renewables, LLC State: WA Sampling Point: VP-314b  
 Investigator(s): Jess Taylor, Summer Roberts Section, Township, Range: T4-0N R15-0E S13  
 Landform (hillside, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.833438 Long: -120.867089 Datum: WGS 84  
 Soil Map Unit Name: 30B: Rocky-Lorena complex, 2 to 15 percent slopes, extremely stony NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Representative upland plot for VP-314.	

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lithophragma parviflorum</u>	15	No	UPL	
2. <u>Sisymbrium altissimum</u>	5	No	FACU	
3. <u>Poa secunda</u>	35	Yes	FACU	
4. <u>Bromus tectorum</u>	35	Yes	UPL	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
				90 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>    </u>		
Remarks:				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>40</u>	x 4 =	<u>160</u>
UPL species	<u>50</u>	x 5 =	<u>250</u>
Column Totals:	<u>90</u> (A)		<u>410</u> (B)
Prevalence Index = B/A =			<u>4.56</u>

**Hydrophytic Vegetation Indicators:**  
     Dominance Test is >50%  
     Prevalence Index is ≤3.0<sup>1</sup>  
     Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

**SOIL**

Sampling Point: VP-314b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 3/2	100					Loamy/Clayey	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock Restriction</u> Depth (inches): <u>7</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland name or number VP-101

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-101 Date of site visit: 6/27/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY II** (based on functions \_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools <input checked="" type="checkbox"/>	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 8 points = 4 points = 4 points = 0	<b>8</b>
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	<b>0</b>
Total for D 4		Add the points in the boxes above <b>8</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*


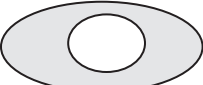

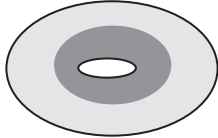
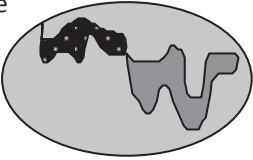
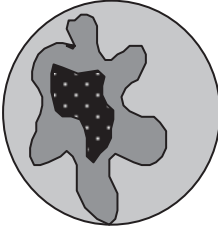
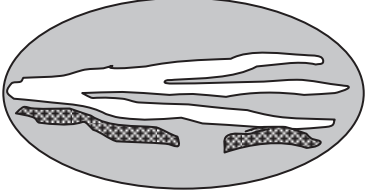
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	<b>0</b>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	<b>0</b>
Total for D 5		Add the points in the boxes above <b>0</b>

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	<b>0</b>
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	<b>0</b>
Total for D 6		Add the points in the boxes above <b>0</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>		0
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 0

H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1	
Total for H 1	Add the points in the boxes above	1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	<p>Yes</p>
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

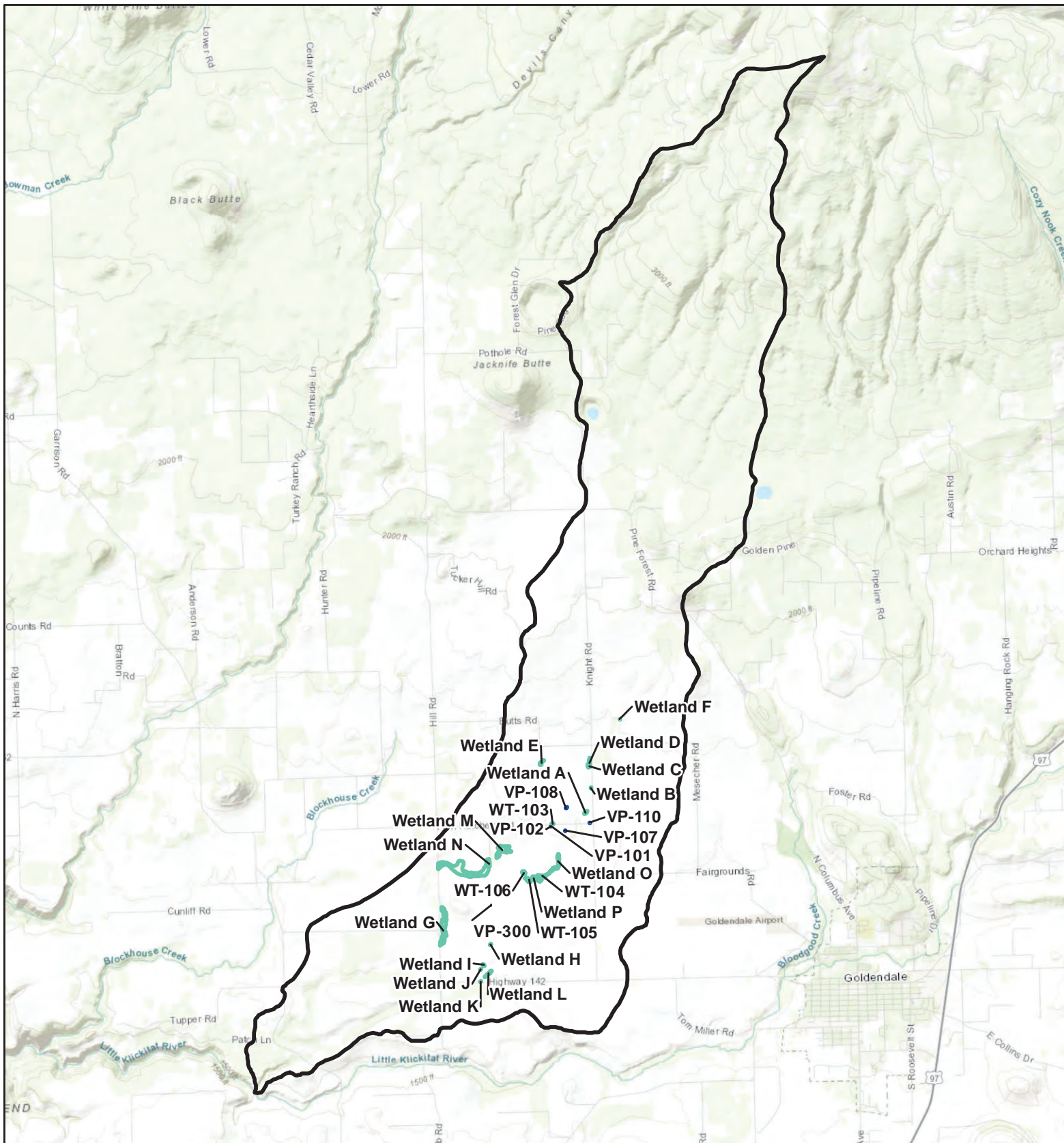
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

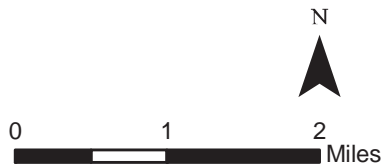
- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

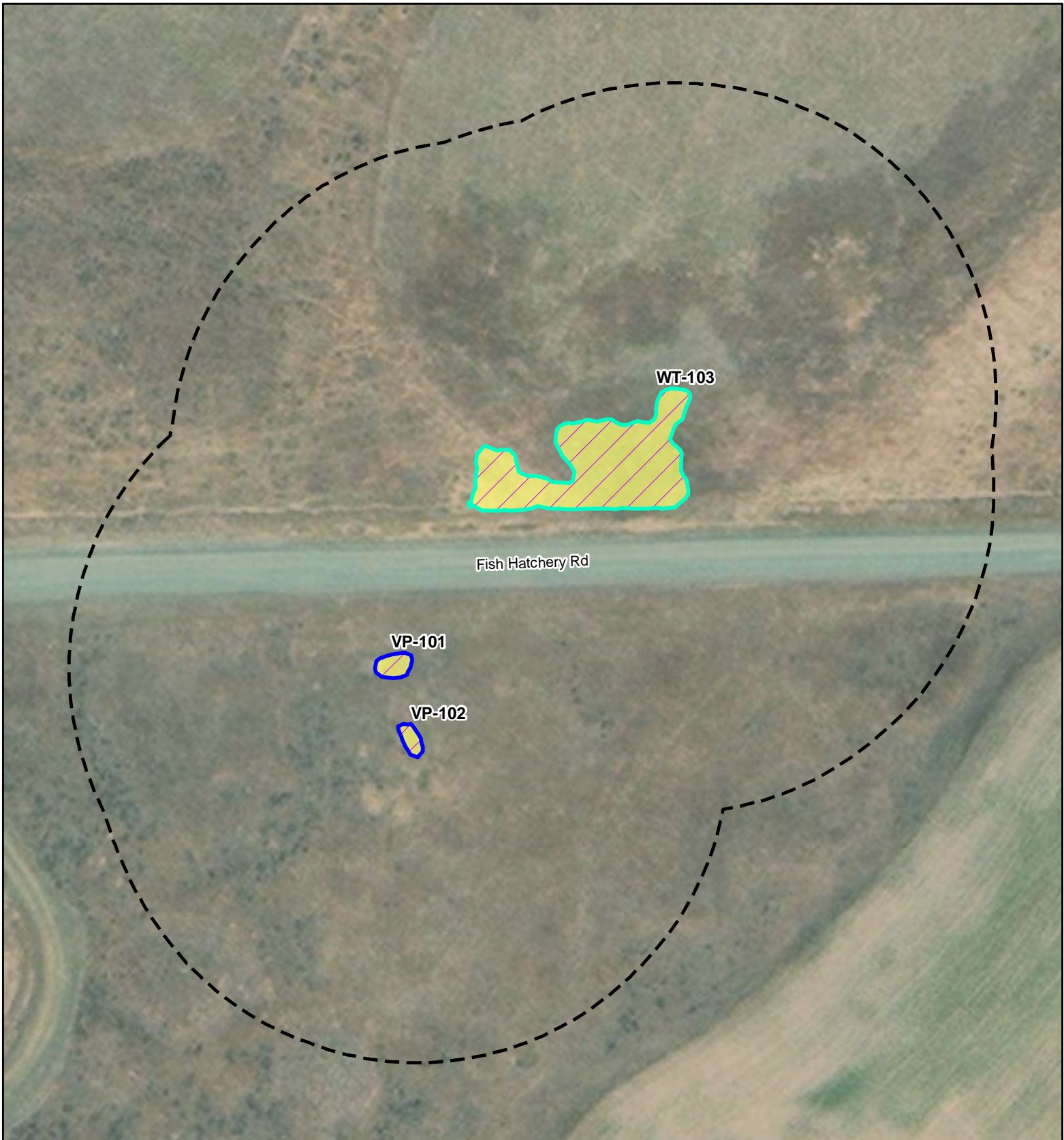


- Vernal Pool
- Wetland
- Contributing Basin



### Contributing Basin

Carriger Solar, LLC Project  
Klickitat County, WA



Stream	<b>Cowardin Classification</b>
Vernal Pool	PEM
Wetland	<b>Hydroperiod</b>
150-foot Buffer	Seasonally Inundated

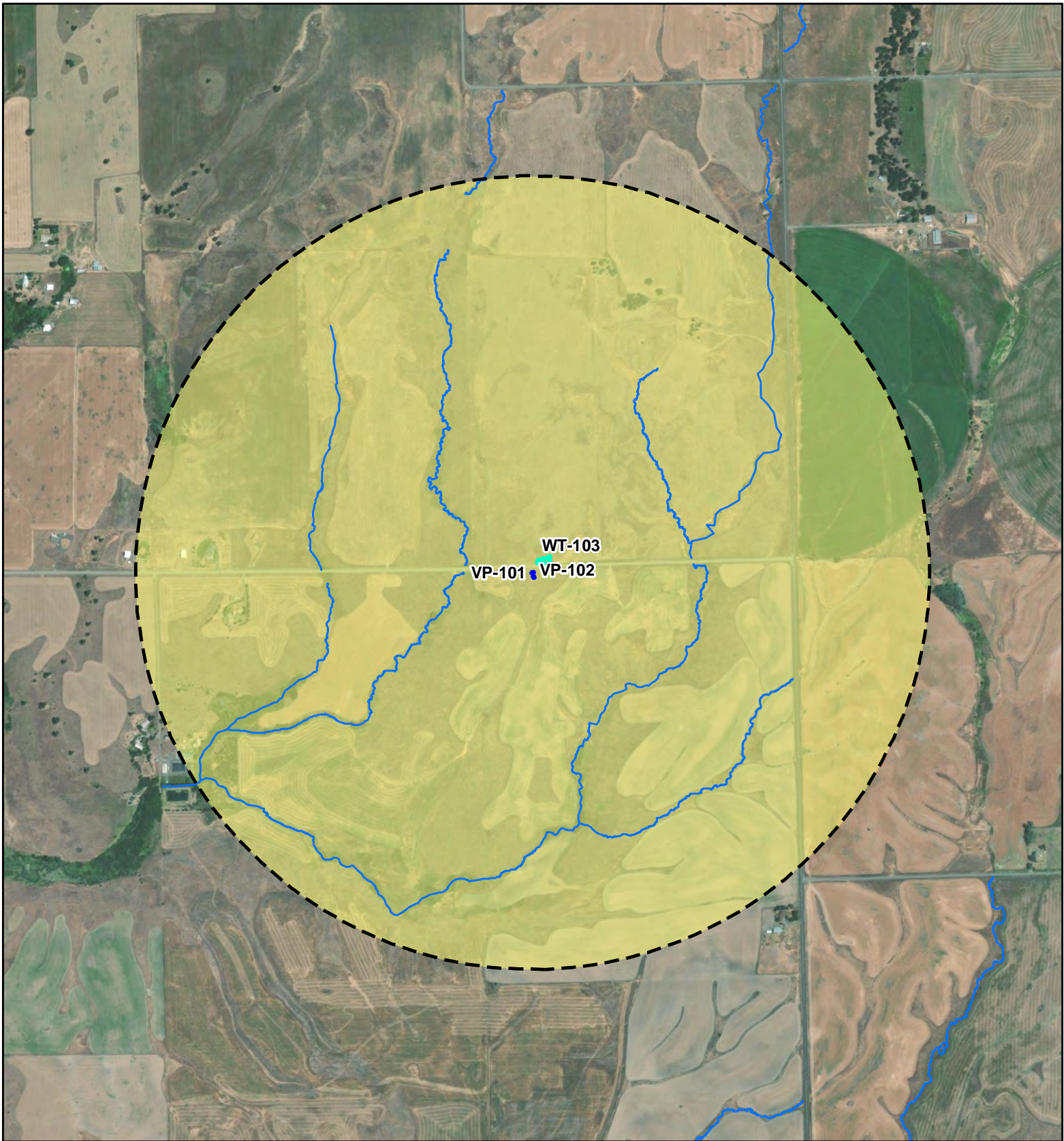
N

0      50      100  
Feet

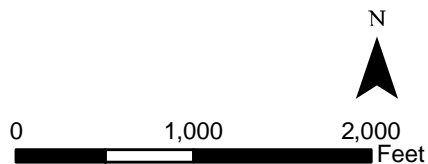
**TETRA TECH**

**VP-101, VP-102 & WT-103  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Vernal Pool
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**VP-101, VP-102, WT-103  
Land Use**

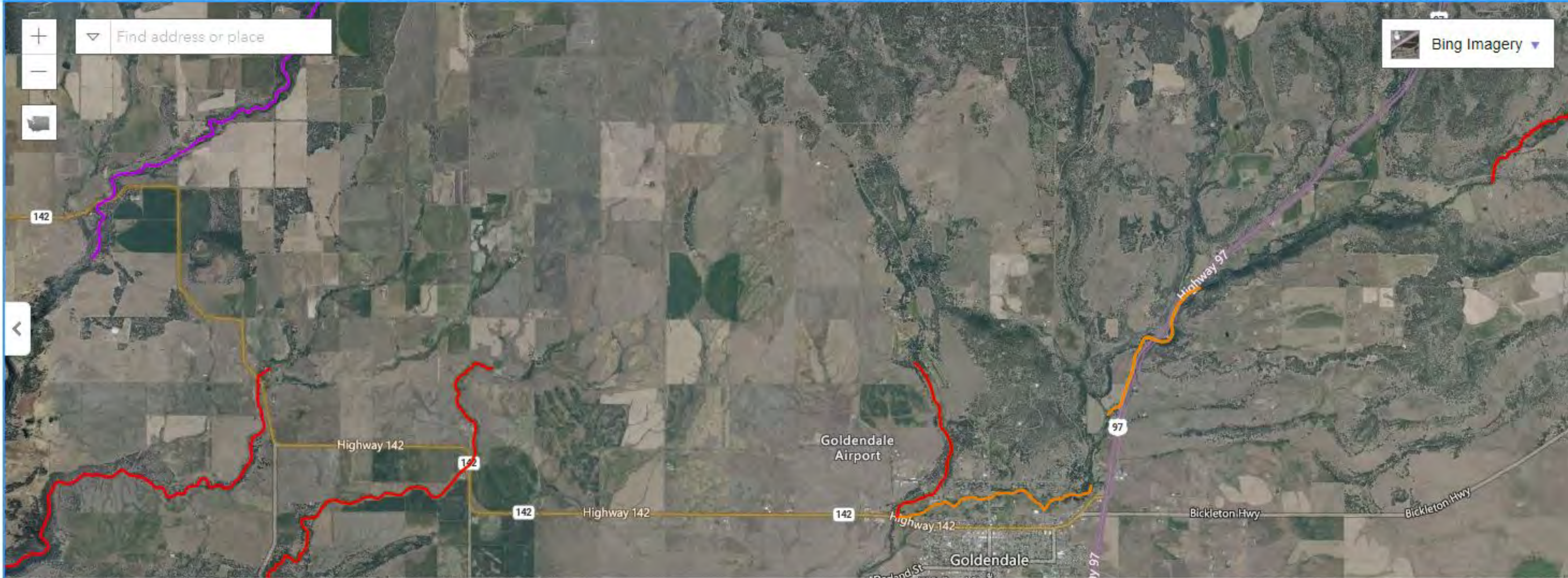
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number VP-102

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-102 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY II** (based on functions \_\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools <input checked="" type="checkbox"/>	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 0	
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u>		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u>		0
Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
<i>Explain why</i> _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*





H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1	
Total for H 1	Add the points in the boxes above	1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	Yes
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

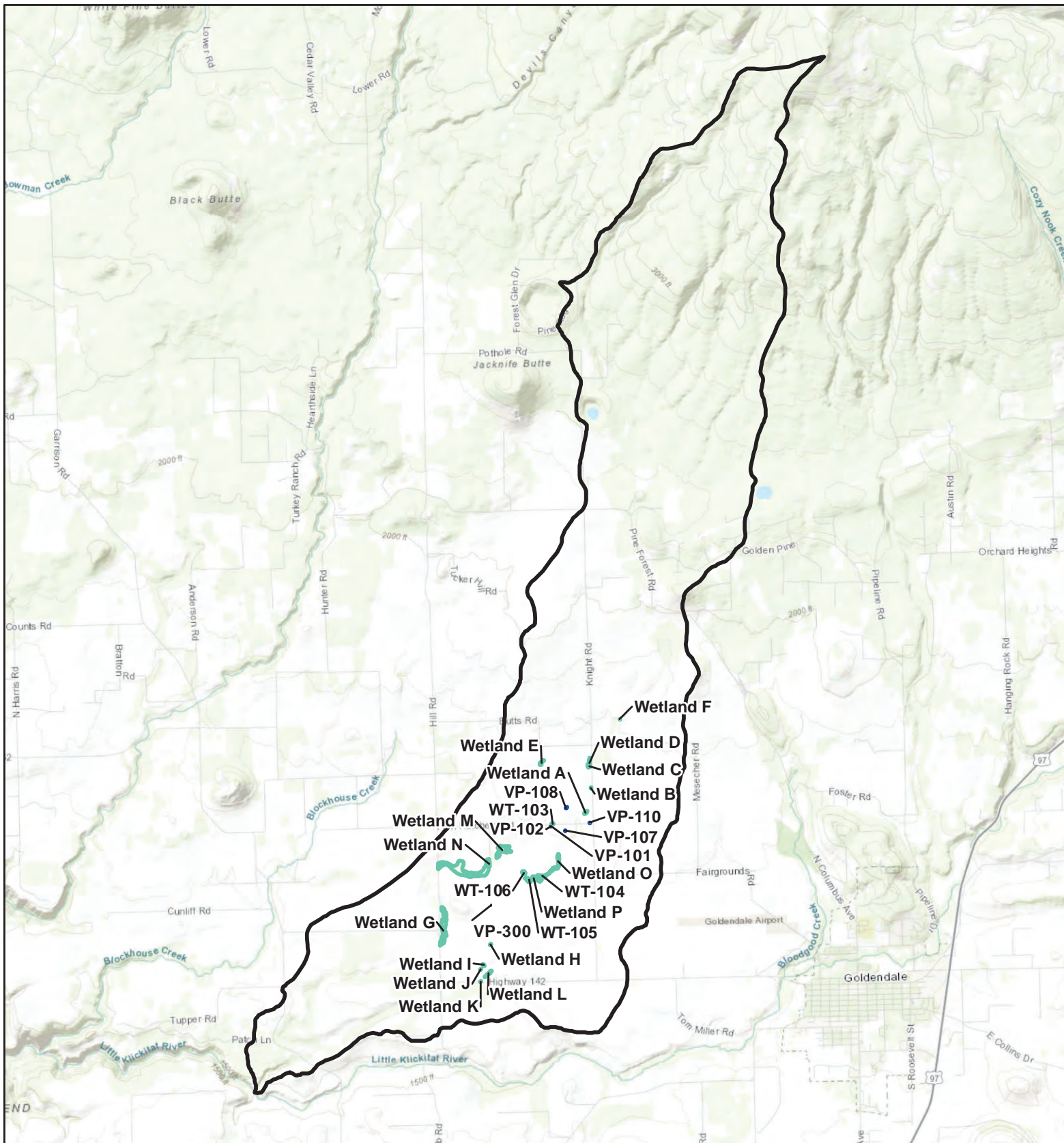
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

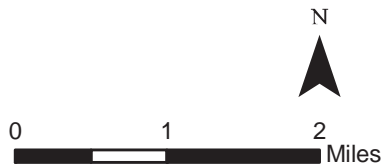
- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

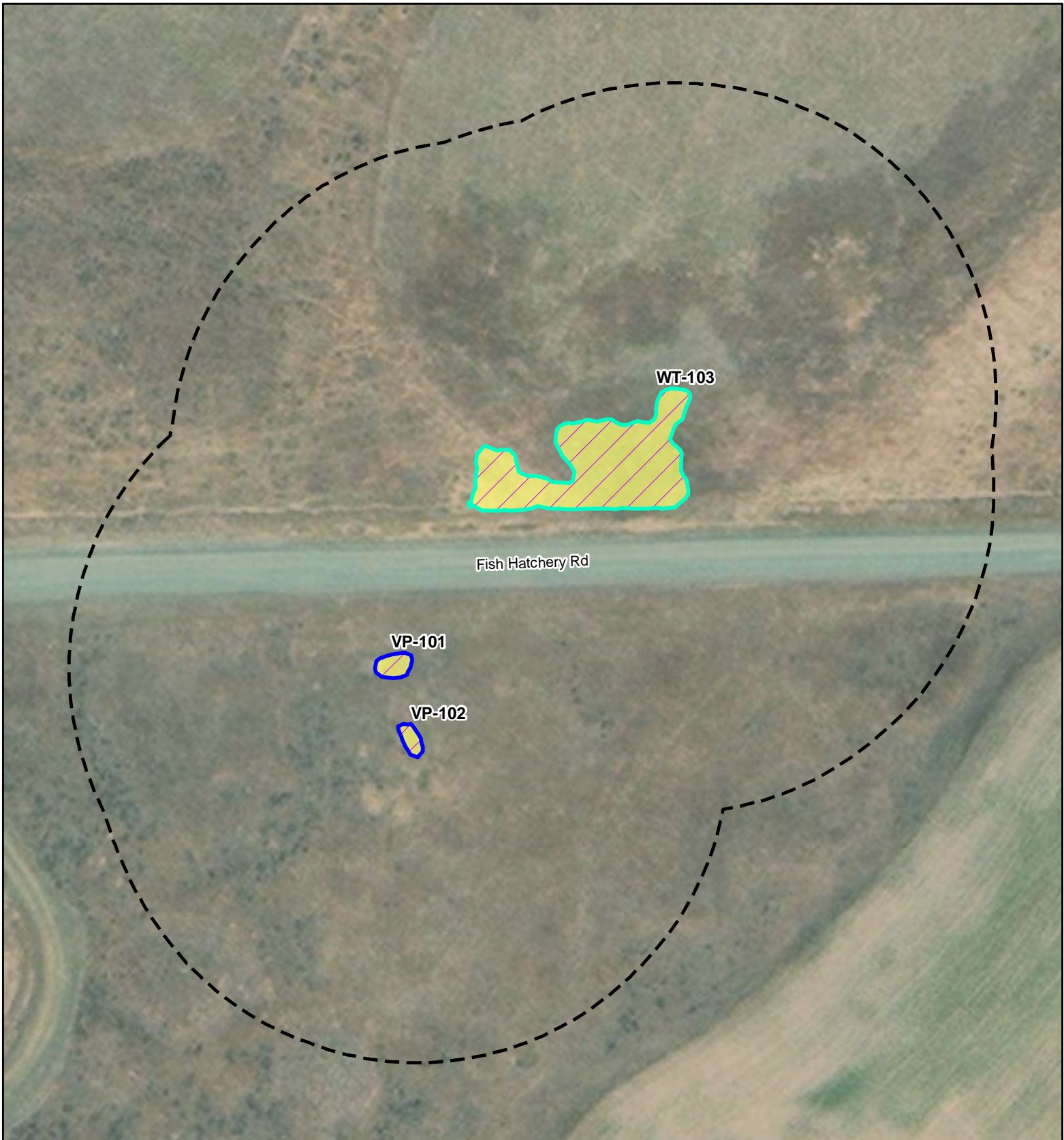








- Vernal Pool
- Wetland
- Contributing Basin




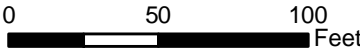
**Contributing Basin**


Carriger Solar, LLC Project  
Klickitat County, WA



 Stream	<b>Cowardin Classification</b>
 Vernal Pool	 PEM
 Wetland	<b>Hydroperiod</b>
 150-foot Buffer	 Seasonally Inundated

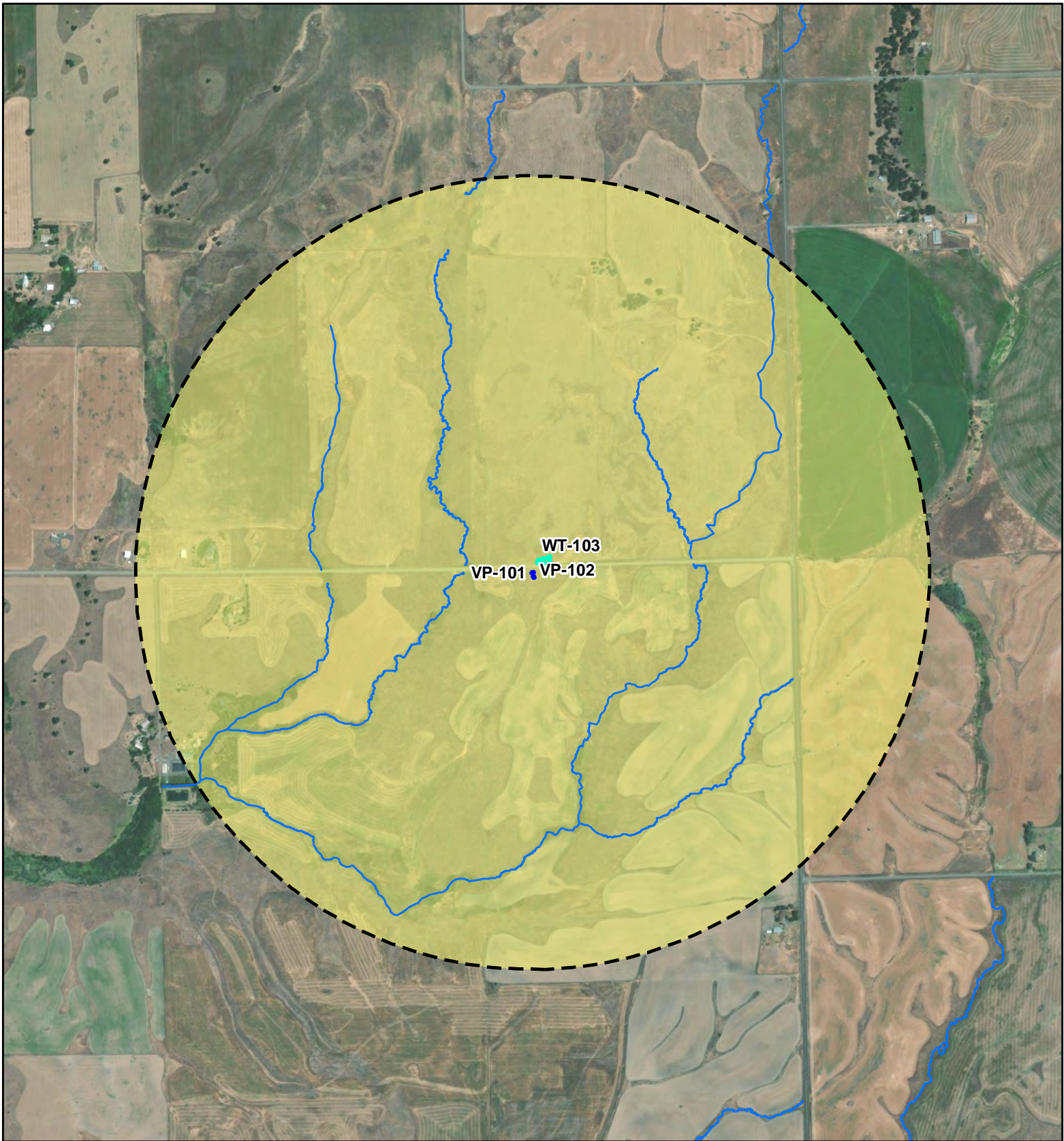




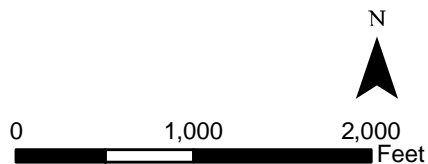


**VP-101, VP-102 & WT-103  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Vernal Pool
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**VP-101, VP-102, WT-103  
Land Use**

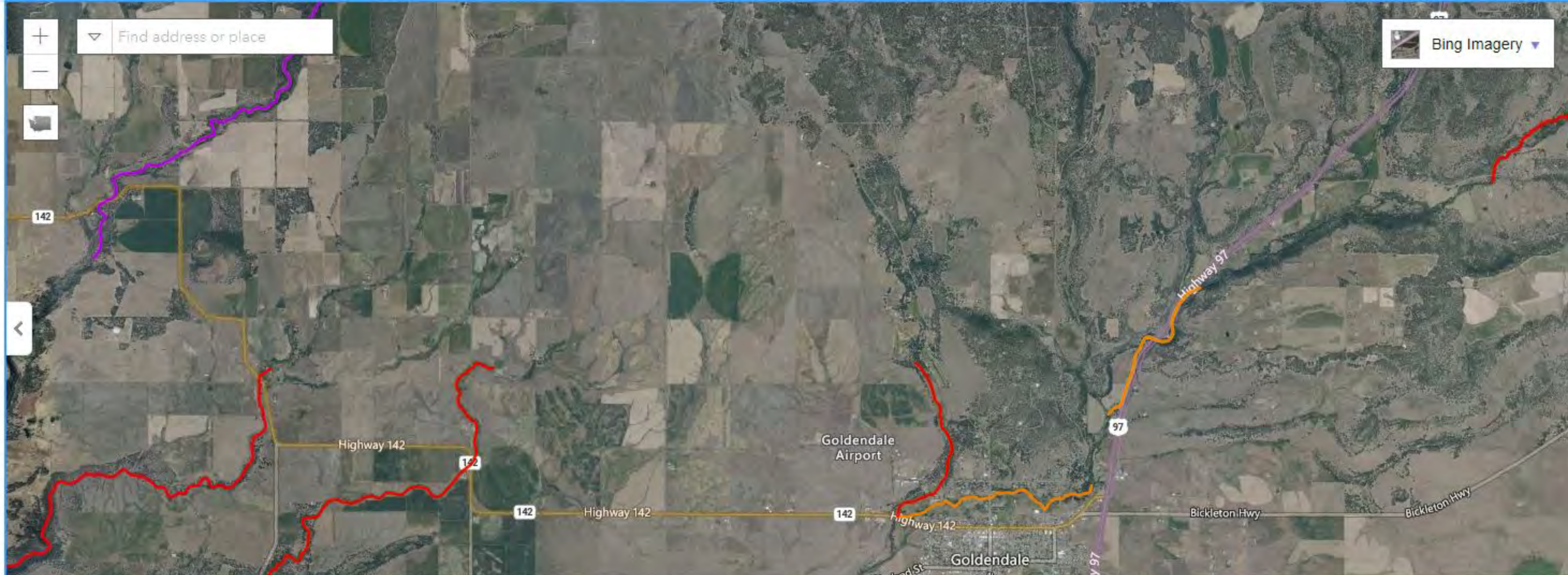
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number VP-107

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-107 Date of site visit: 6/27/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY** II (based on functions \_\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools <input checked="" type="checkbox"/>	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 8 points = 4 points = 4 points = 0	8
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	0
Total for D 4		Add the points in the boxes above 8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*


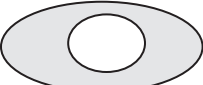

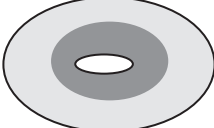
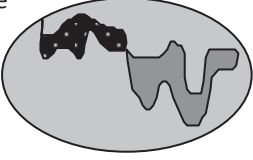
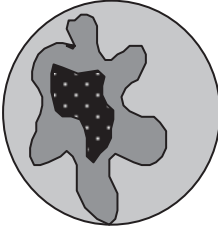
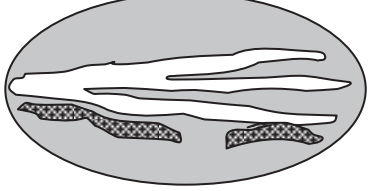
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5		Add the points in the boxes above 0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6		Add the points in the boxes above 0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	0	
<p><b>H 1.2.</b> Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span></p>	0	
<p><b>H 1.3. Surface water</b></p> <p><b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p><b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>	0	
<p><b>H 1.4. Richness of plant species</b></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>	0	
<p><b>H 1.5. Interspersion of habitats</b></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>	Figure__ 0	

H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1	
Total for H 1	Add the points in the boxes above	1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	<p>Yes</p>
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

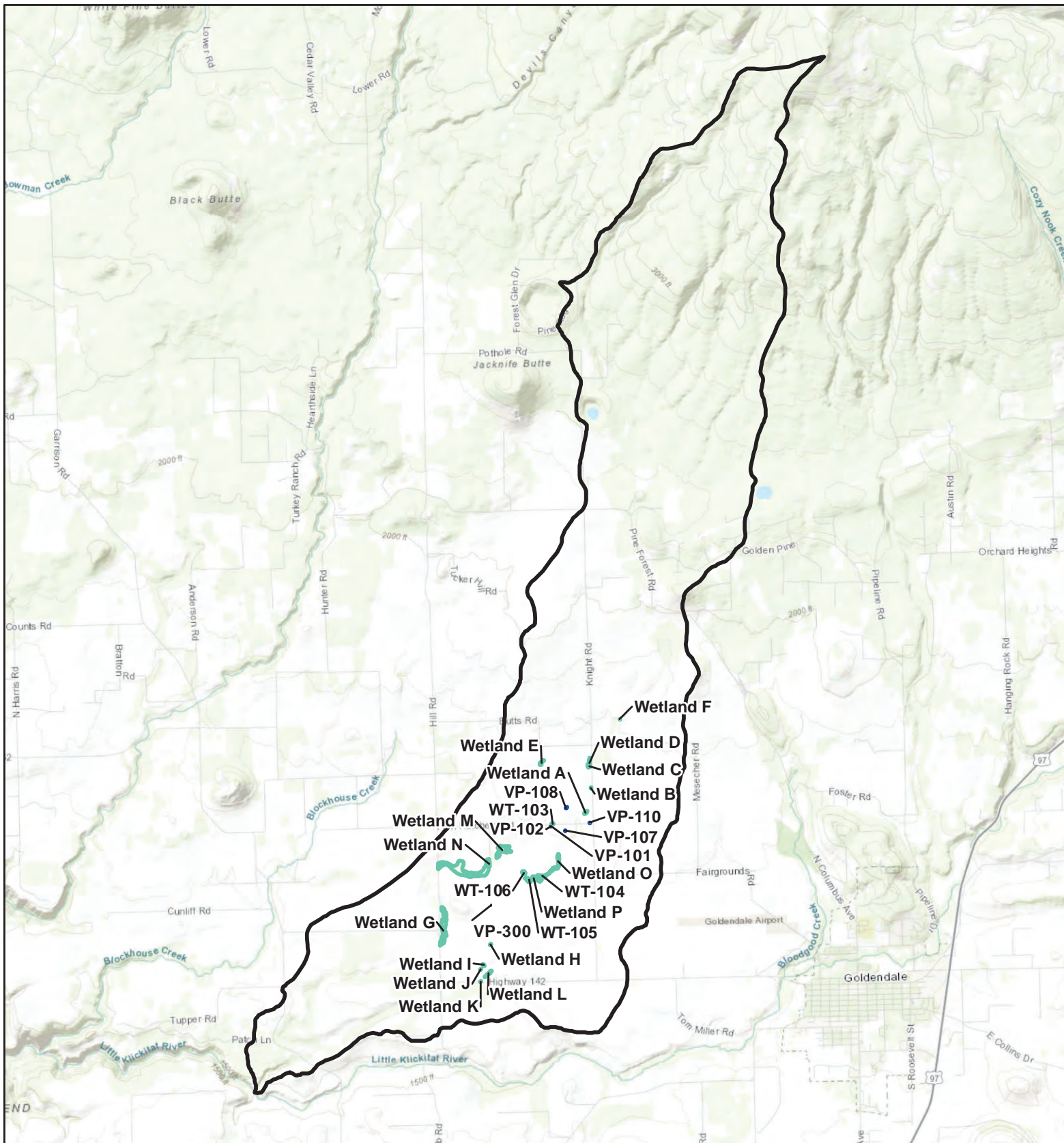
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

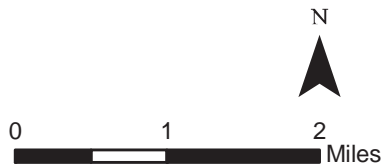
- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

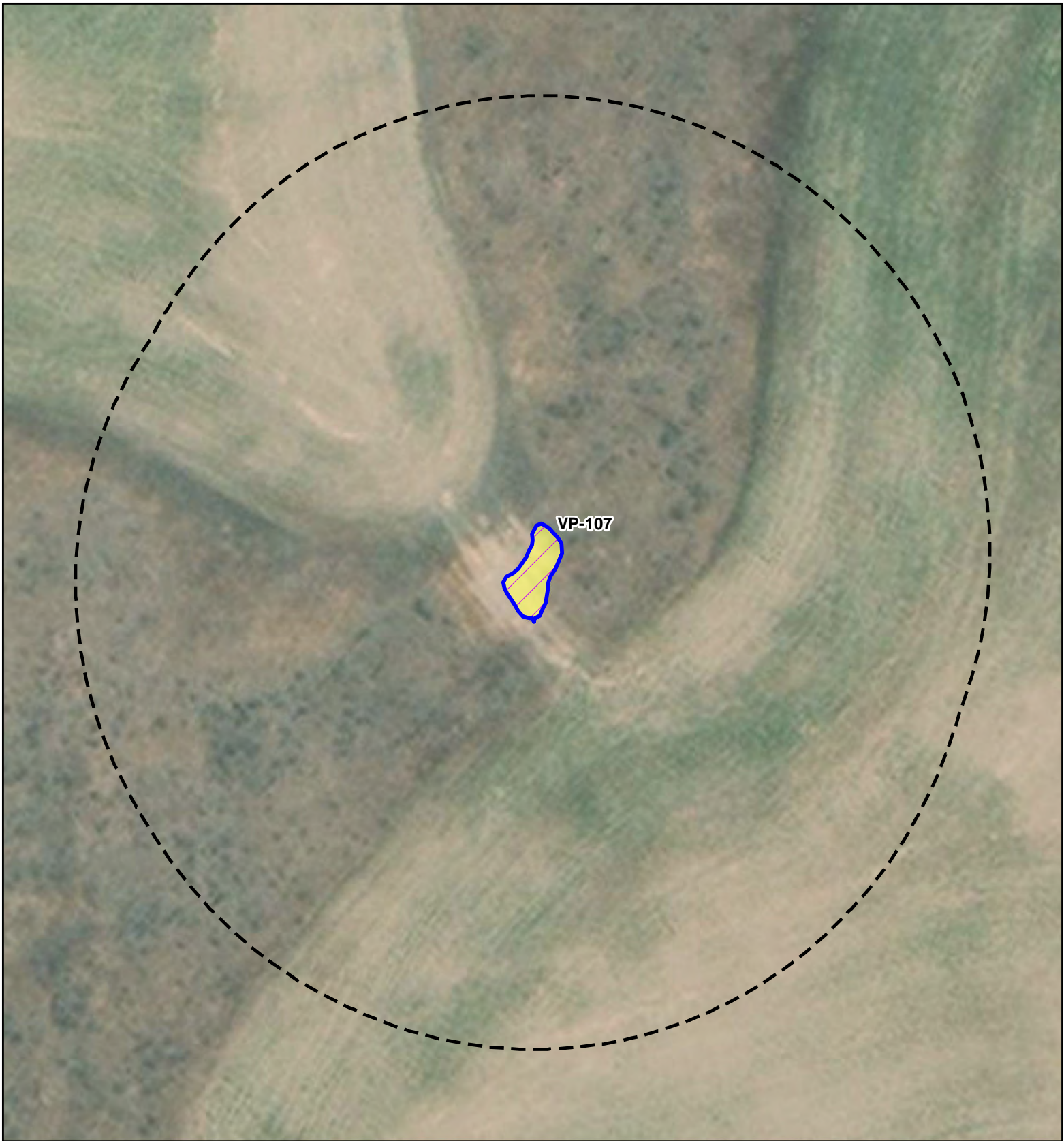





- Vernal Pool
- Wetland
- Contributing Basin





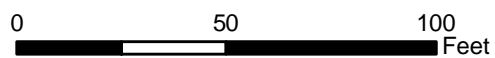
**Contributing Basin**

Carriger Solar, LLC Project  
Klickitat County, WA



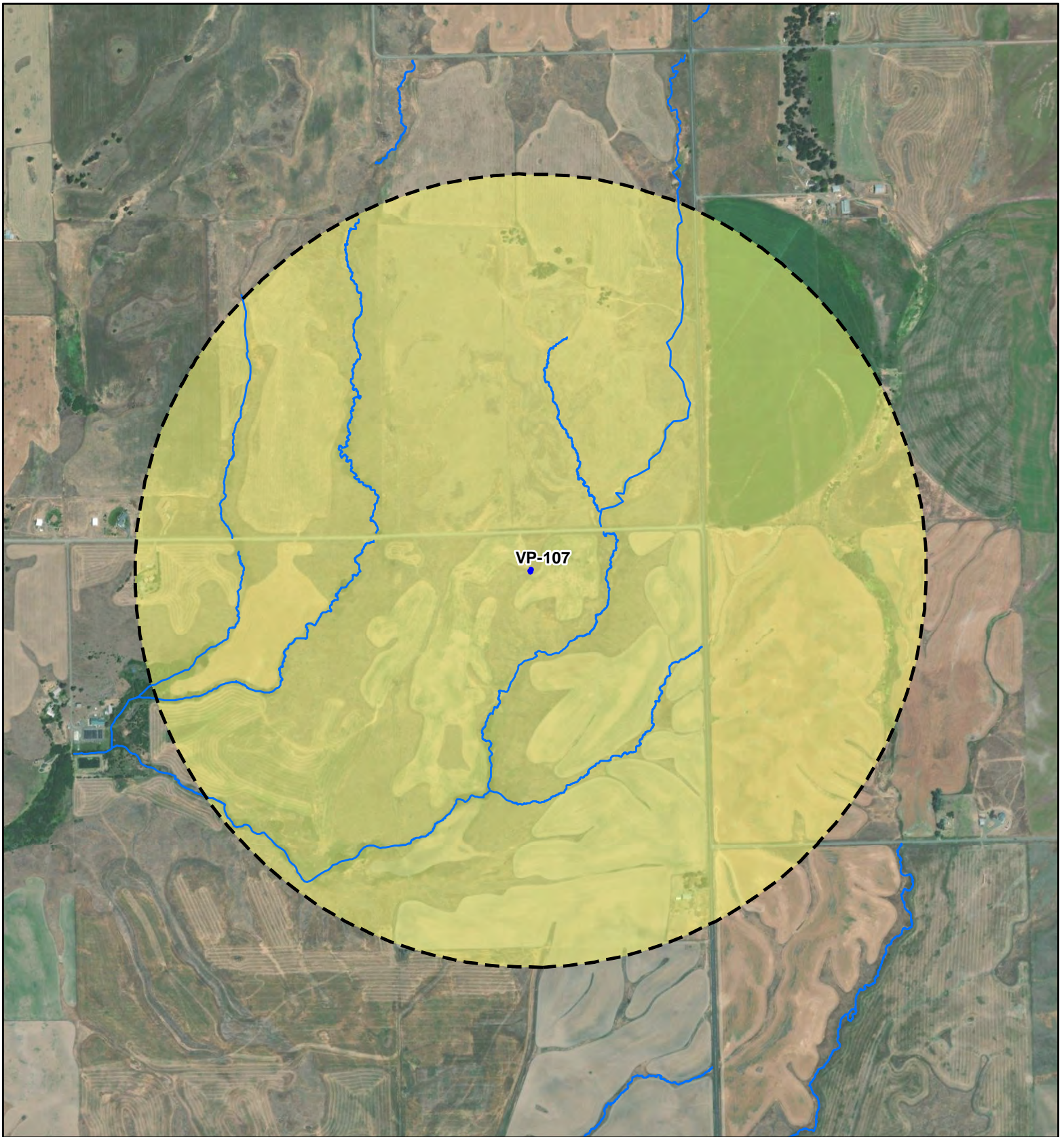
-  Stream
-  Vernal Pool
-  150-foot Buffer





- Cowardin Classification
-  PEM
- Hydroperiod
-  Seasonally Inundated

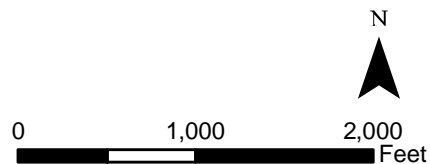


**VP-107**  
**Cowardin Classification**  
**and Hydroperiod**

Carriger Solar, LLC Project  
 Klickitat County, WA



-  Stream
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity
-  Moderate/Low



**VP-107  
Land Use**

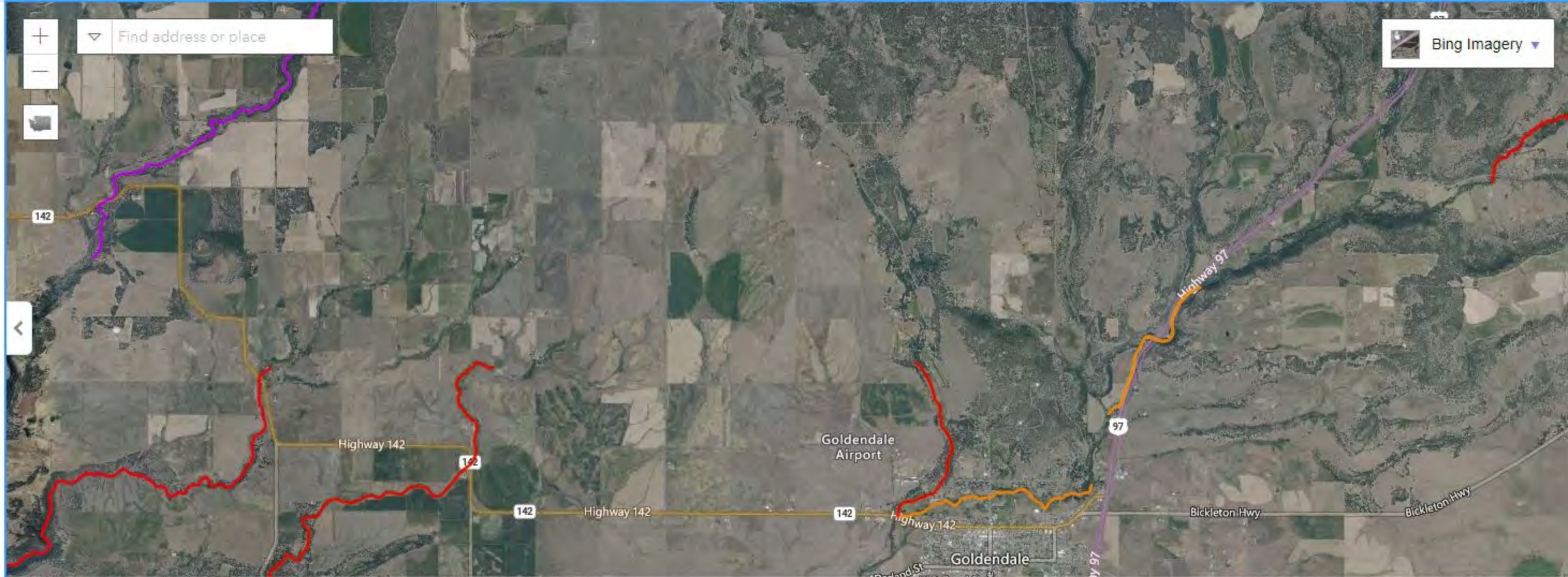
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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Powered by Esri

## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number VP-108

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-108 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY II** (based on functions \_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools <input checked="" type="checkbox"/>	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet	points = 5	5
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (*use NRCS definitions of soils*)

YES = 3 NO = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	0
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	

D 1.4. Characteristics of seasonal ponding or inundation:

*This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*

Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	1
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	

Total for D 1

Add the points in the boxes above

6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

0

D 2.2. Is  $> 10\%$  of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0

0

D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0

0

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions

D 2.1- D 2.3? Source \_\_\_\_\_ Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?

Yes = 1 No = 0

0

D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?

Yes = 1 No = 0

0

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the drainage or basin in which the wetland is found*)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 8 points = 4 points = 4 points = 0	8
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	0
Total for D 4		Add the points in the boxes above 8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*


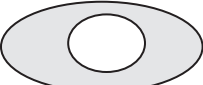

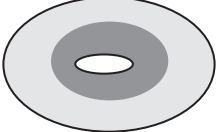
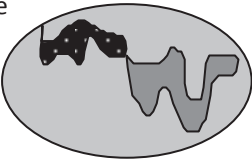

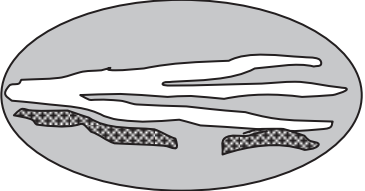
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5		Add the points in the boxes above 0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6		Add the points in the boxes above 0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	<b>0</b>	
<p><b>H 1.2.</b> Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span></p>	<b>0</b>	
<p><b>H 1.3.</b> <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>	<b>0</b>	
<p><b>H 1.4.</b> <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>4</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>	<b>0</b>	
<p><b>H 1.5.</b> <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	<b>Figure__ 0</b>	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  &gt; 1/3 (33.3%) of 1 km Polygon points = 3                  20-33% of 1km Polygon points = 2                  10-19% of 1km Polygon points = 1                  &lt;10% of 1km Polygon points = 0</p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  Undisturbed habitat &gt; 50% of Polygon points = 3                  Undisturbed habitat 10 - 50% and in 1-3 patches points = 2                  Undisturbed habitat 10 - 50% and &gt; 3 patches points = 1                  Undisturbed habitat &lt; 10% of Polygon points = 0</p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                  &gt; 50% of Polygon is high intensity land use points = (- 2)                  Does not meet criterion above points = 0</p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                  Yes = 3 No = 0</p>	0
Total for H 2	Add the points in the boxes above

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                  Site meets ANY of the following criteria: points = 2  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                  Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1                  Site does not meet any of the criteria above points = 0</p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

*Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.*

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	Yes
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

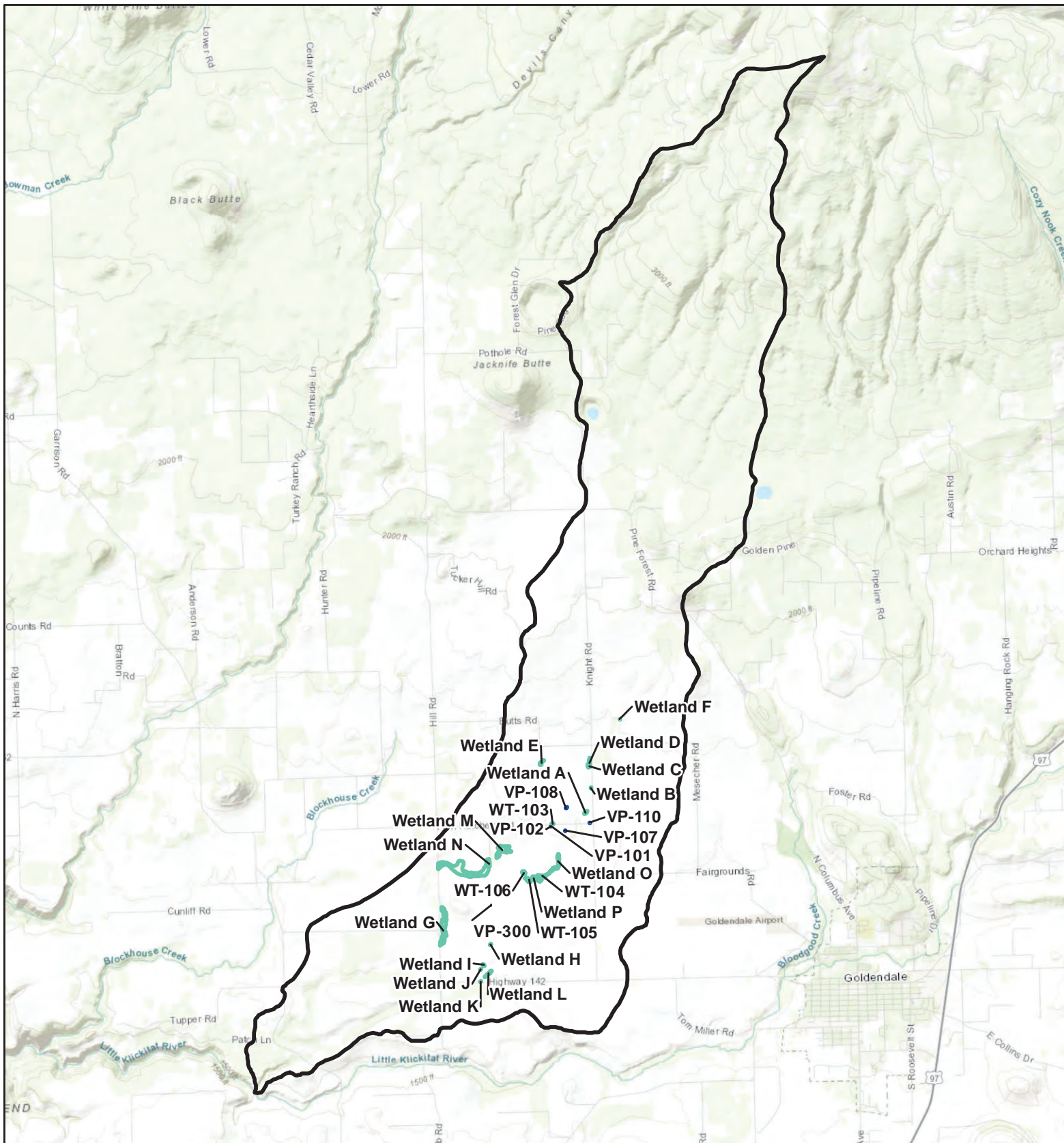
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

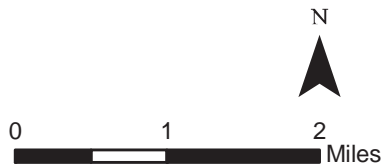
- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

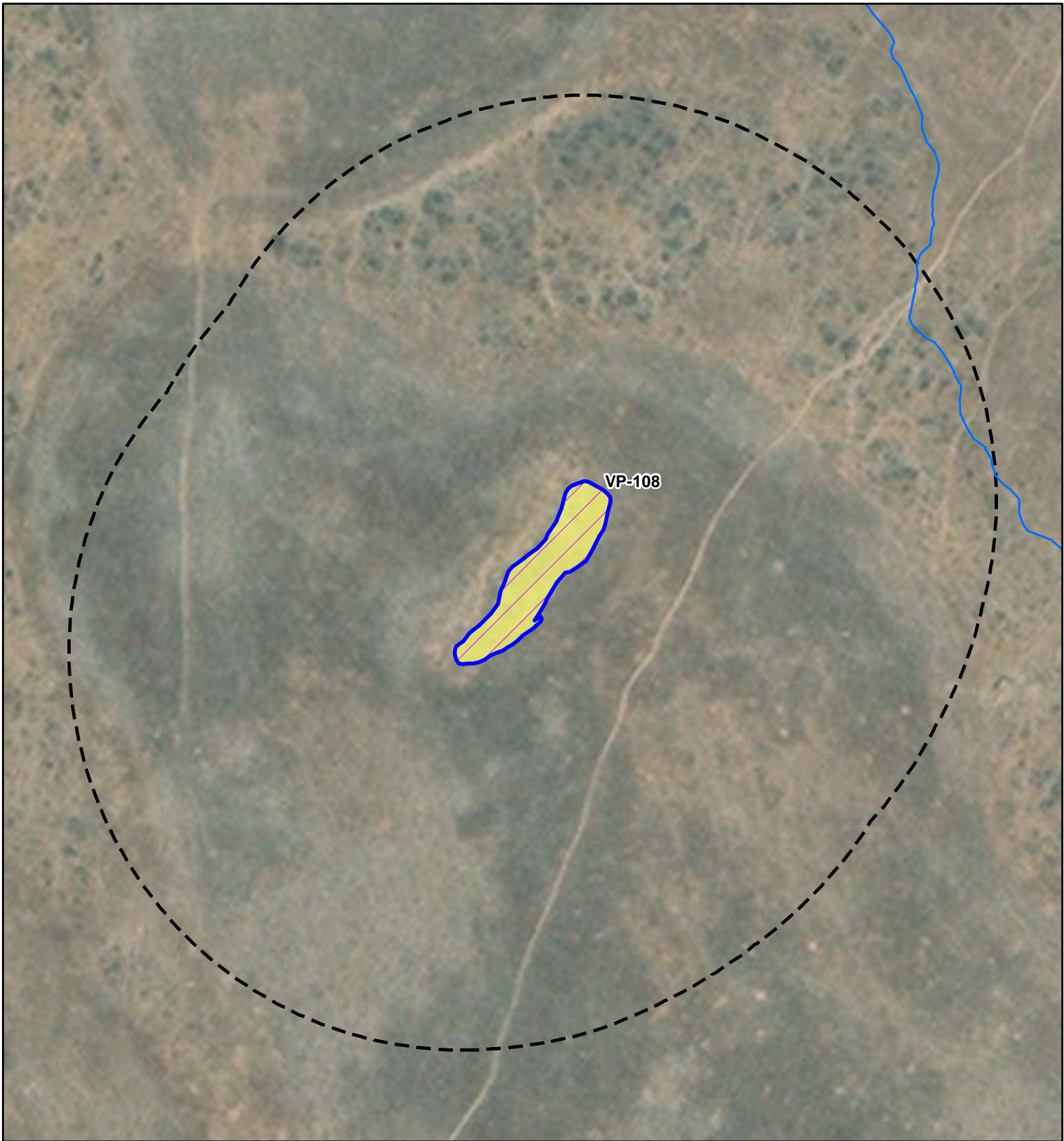





- Vernal Pool
- Wetland
- Contributing Basin





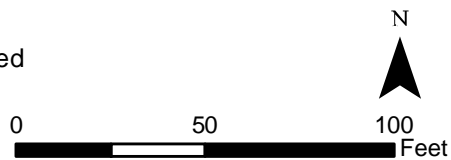
**Contributing Basin**

Carriger Solar, LLC Project  
Klickitat County, WA



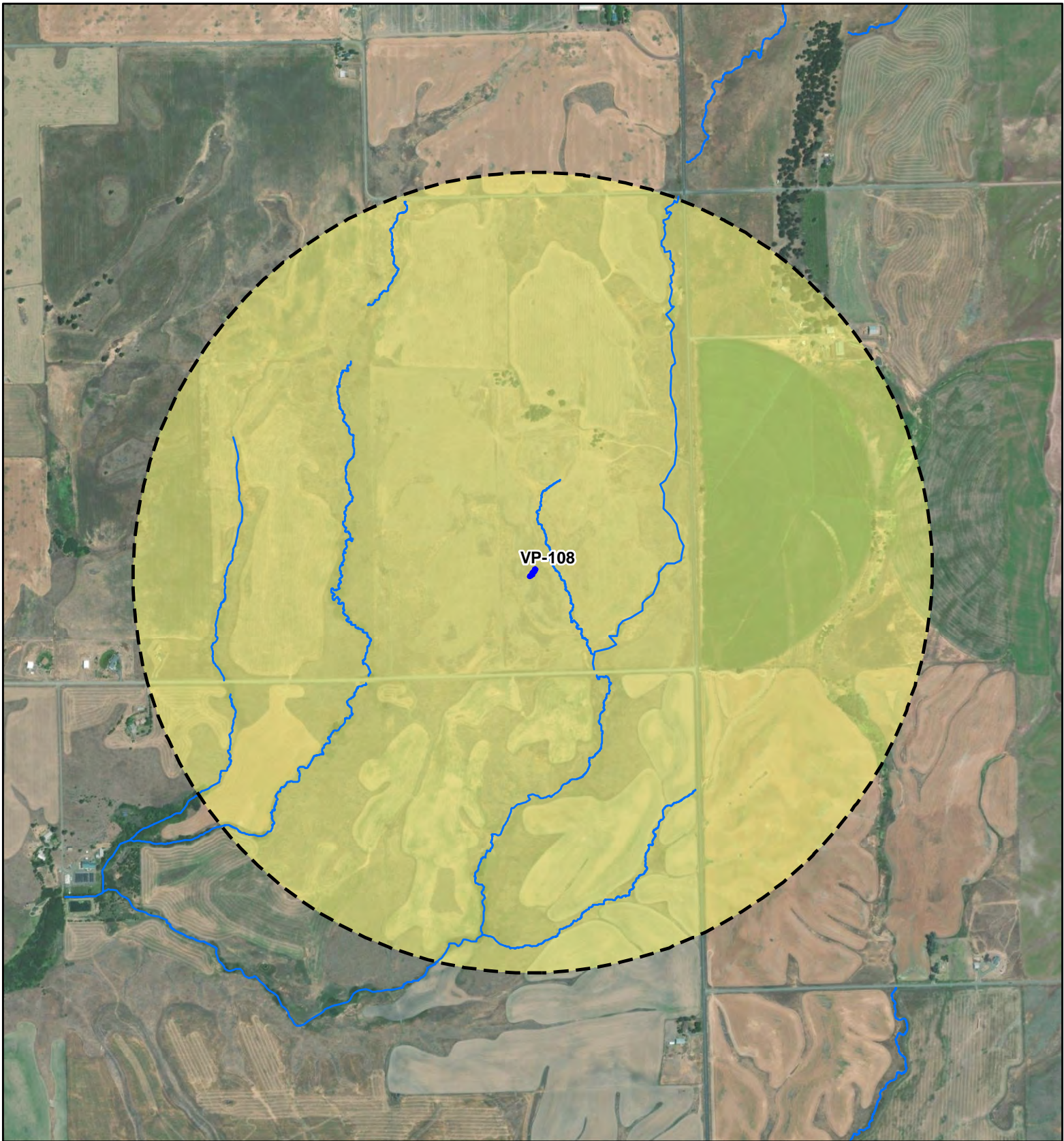
-  Stream
-  Vernal Pool
-  150-foot Buffer





- Cowardin Classification
-  PEM
- Hydroperiod
-  Seasonally Inundated

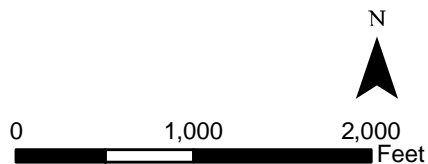


**VP-108  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity
-  Moderate/Low



**VP-108  
Land Use**

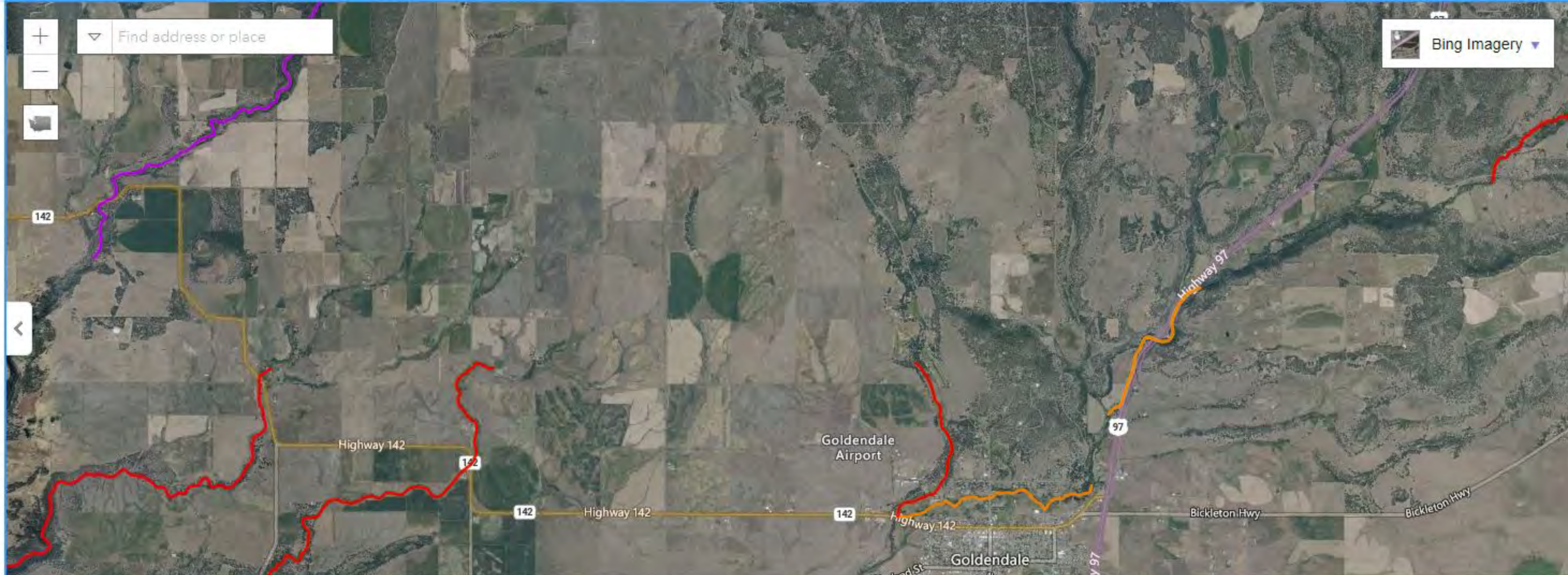
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number VP-110

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-110 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_

HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY** II (based on functions \_\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools <input checked="" type="checkbox"/>	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

*Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

*Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

*Record the rating on the first page*

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u>		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page


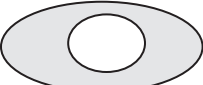

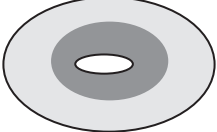
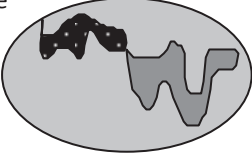
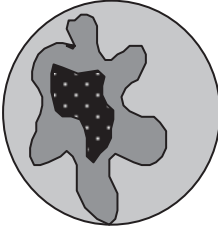
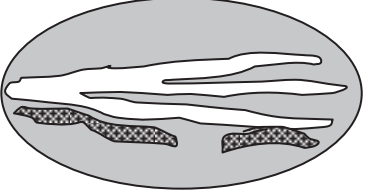
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	0
Total for D 5	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u>		0
Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants $> 40$ in (> 100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $>30\%$ cover) <span style="float: right;">4 or more checks: points = 3</span> <input type="checkbox"/> Forested (areas where trees have $>30\%$ cover) <span style="float: right;">3 checks: points = 2</span> <span style="float: right;">2 checks: points = 1</span> <span style="float: right;">1 check: points = 0</span>		0
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span> H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span>		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span> <span style="float: right;">4-9 species: points = 1</span> <span style="float: right;"><math>&lt; 4</math> species: points = 0</span>		0
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		Figure__ 0
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">   <b>None = 0 points</b> </div> <div style="text-align: center;">   <b>Low = 1 point</b> </div> <div style="text-align: center;">   <b>Moderate = 2 points</b> </div> <div style="text-align: center;">   <b>Moderate = 2 points</b> </div> </div> <div style="margin-top: 20px;"> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p> </div>		

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  &gt; 1/3 (33.3%) of 1 km Polygon points = 3                  20-33% of 1km Polygon points = 2                  10-19% of 1km Polygon points = 1                  &lt;10% of 1km Polygon points = 0</p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  Undisturbed habitat &gt; 50% of Polygon points = 3                  Undisturbed habitat 10 - 50% and in 1-3 patches points = 2                  Undisturbed habitat 10 - 50% and &gt; 3 patches points = 1                  Undisturbed habitat &lt; 10% of Polygon points = 0</p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                  &gt; 50% of Polygon is high intensity land use points = (- 2)                  Does not meet criterion above points = 0</p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                  Yes = 3 No = 0</p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                  Site meets ANY of the following criteria: points = 2  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                  Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1                  Site does not meet any of the criteria above points = 0</p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	Yes
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

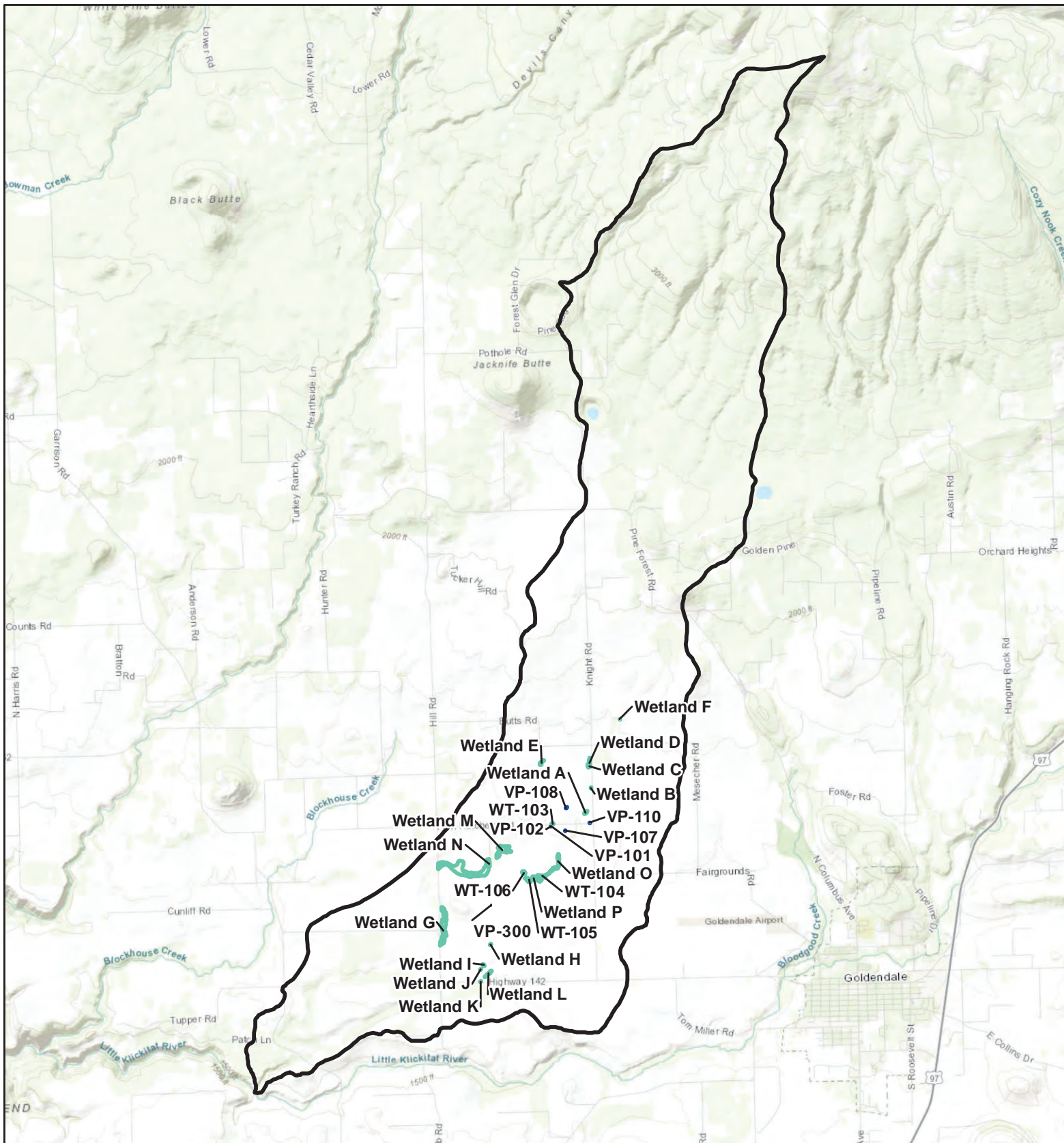
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

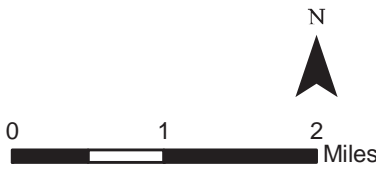
- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

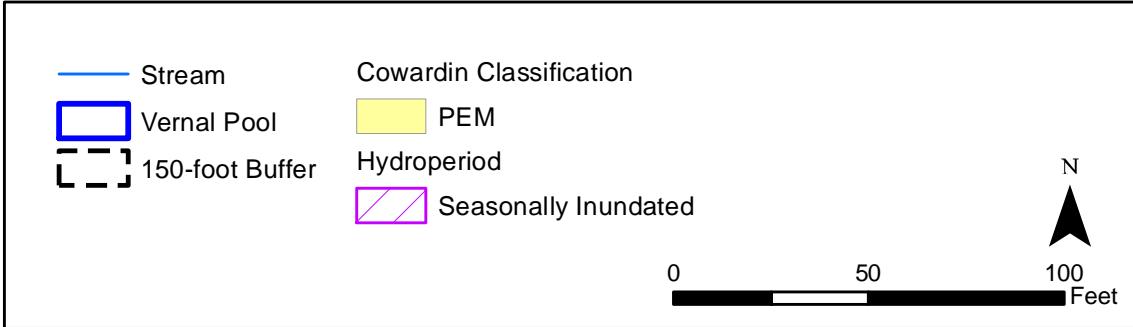
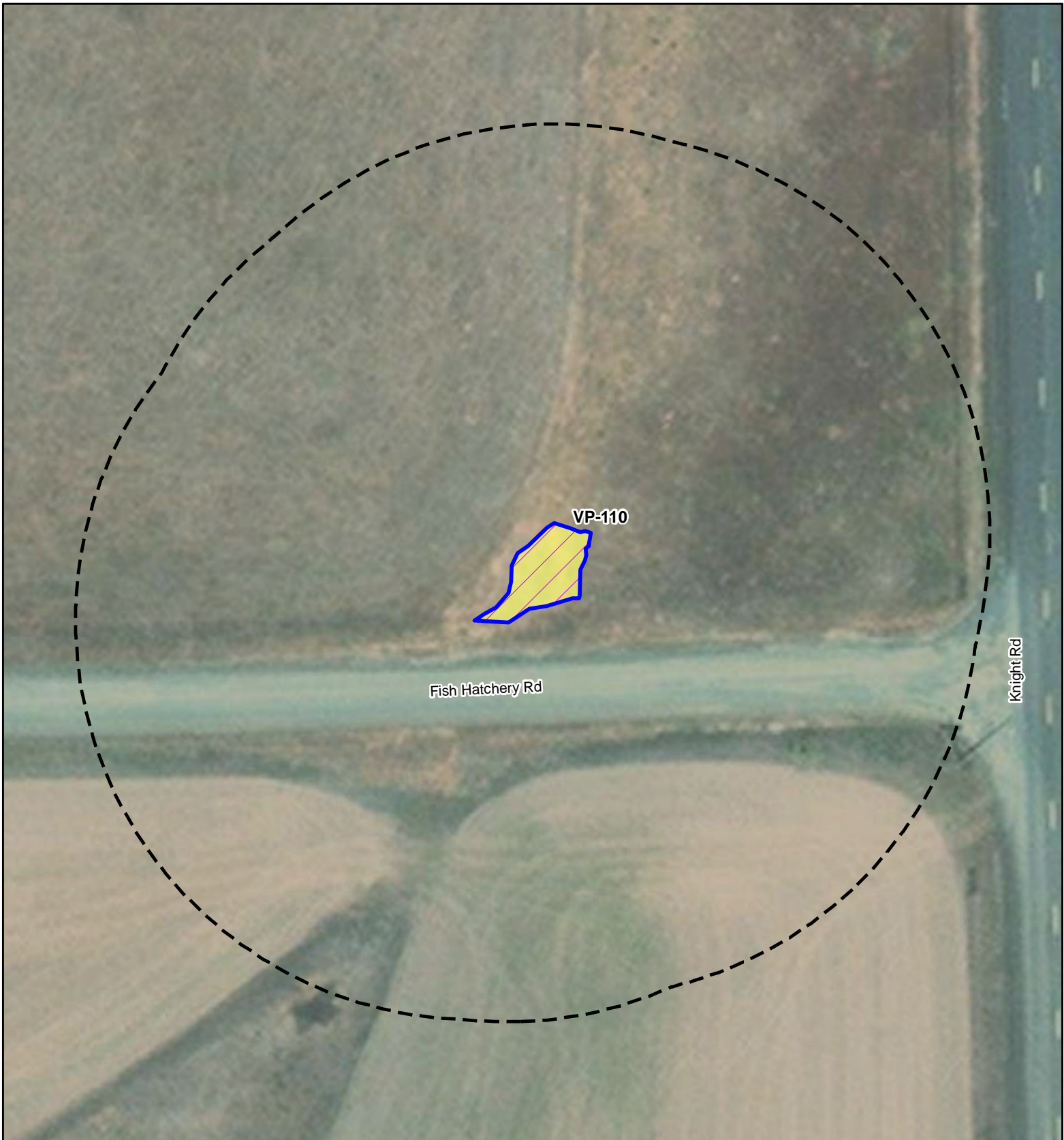



- Vernal Pool
- Wetland
- Contributing Basin

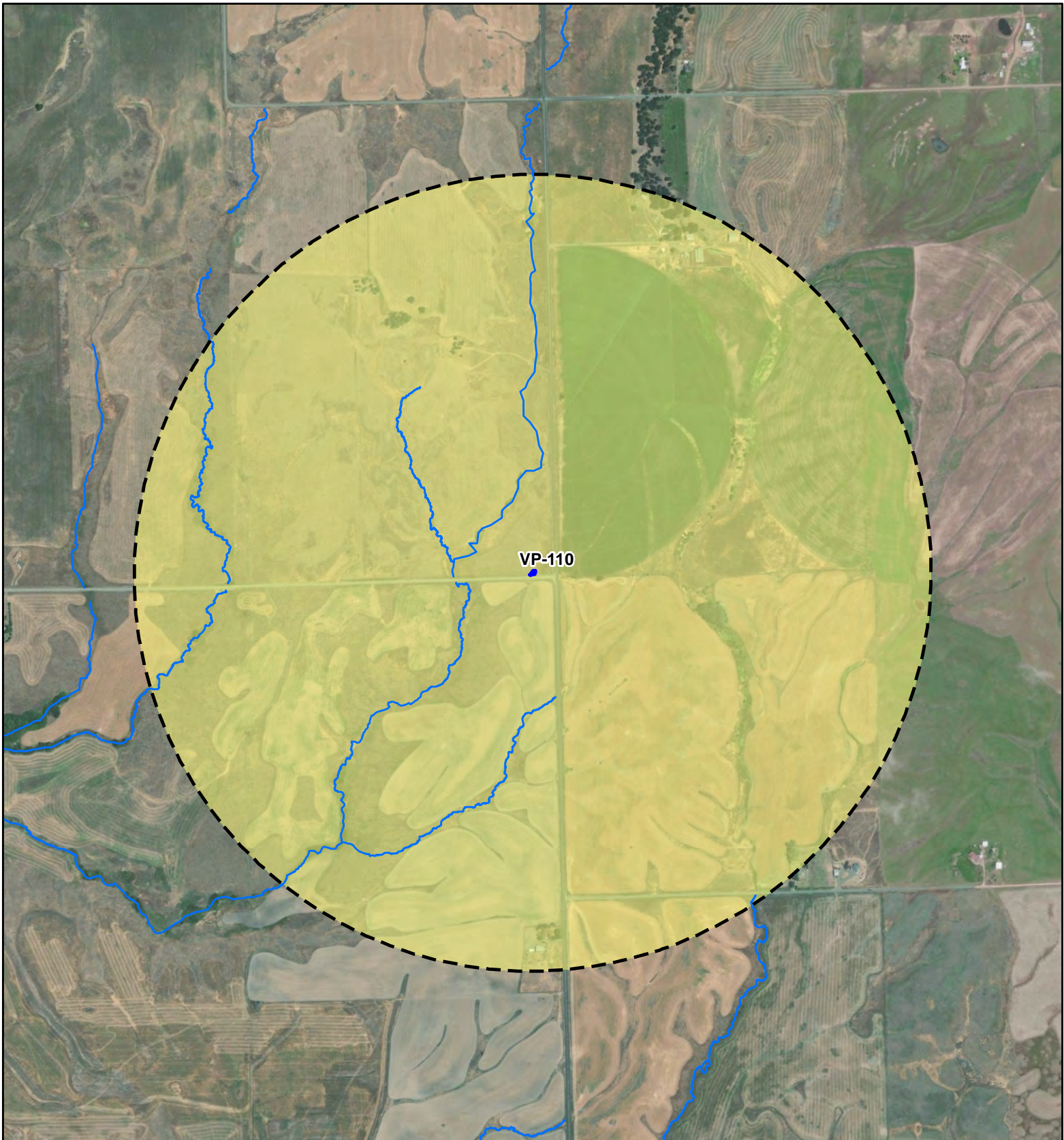


**Contributing Basin**

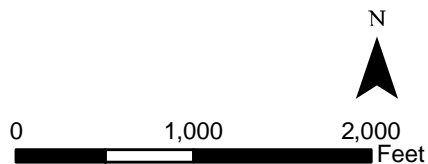
Carriger Solar, LLC Project  
Klickitat County, WA




<p><b>VP-110</b>  <b>Cowardin Classification</b>  <b>and Hydroperiod</b></p>
<p>Carriger Solar, LLC Project          Klickitat County, WA</p>



- Stream
- Vernal Pool
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**VP-110  
Land Use**

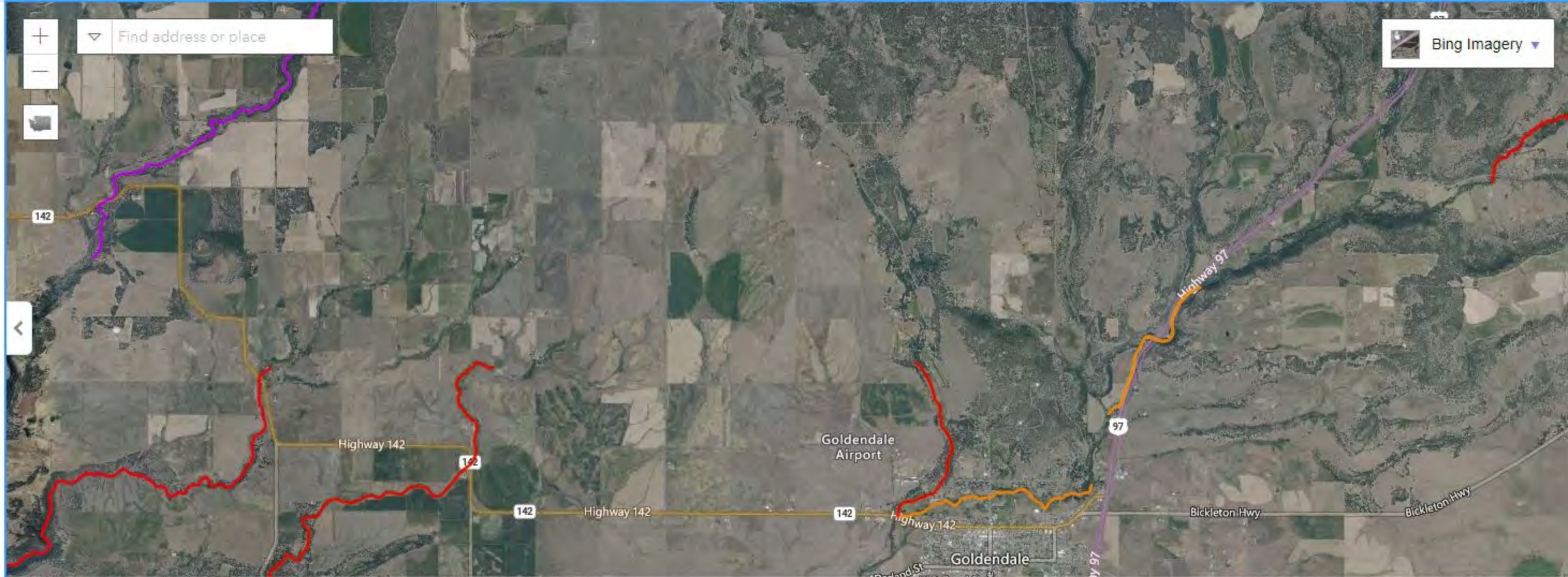
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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Powered by Esri

## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number \_\_\_\_\_

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-300 Date of site visit: 10/23/23  
 Rated by Jess Taylor and Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- x Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H X 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M X 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: X 2-4 = H 1 = M X 0 = L

Record the rating on the first page

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

8

- Wetland has no surface water outlet** points = 8
- Wetland has an intermittently flowing outlet points = 4
- Wetland has a highly constricted permanently flowing outlet points = 4
- Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

0

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils** points = 0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

1

**Rating of Landscape Potential** If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

0

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* \_\_\_\_\_ points = 0

**There are no problems with flooding downstream of the wetland** points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6


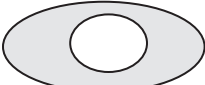

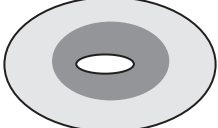
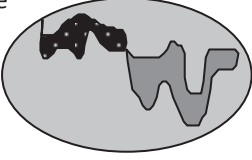

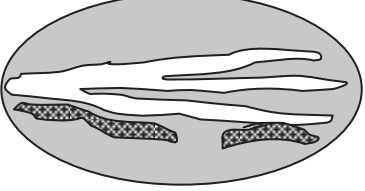
Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 <b>No = 0</b>	
H 1.3. <u>Surface water</u>		
<p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3 <b>No = 0</b></p>		0
H 1.4. <u>Richness of plant species</u>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2          4-9 species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>		0
H 1.5. <u>Interspersion of habitats</u>		
<p>Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 0

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <u>&gt; 1/3 (33.3%) of 1 km Polygon</u> <span style="float: right;">points = 3</span>                      20-33% of 1km Polygon <span style="float: right;">points = 2</span>                      10-19% of 1km Polygon <span style="float: right;">points = 1</span>                      &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                      Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>                      Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>                      Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <u>Undisturbed habitat &lt; 10% of Polygon</u> <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                      &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <u>Does not meet criterion above</u> <span style="float: right;">points = 0</span></p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 4

**Rating of Landscape Potential** If score is: X 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                      Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                      Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <u>Site does not meet any of the criteria above</u> <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M X 0 = L Record the rating on the first page

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b> Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <p><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</p> <p><input checked="" type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></p> <p><input checked="" type="checkbox"/> The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</p> <p><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</p> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = <b>Category II</b> No = <b>Category III</b></p>	Yes
<p><b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria?</p> <p><input type="checkbox"/> The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</p> <p><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</p> <p><input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</p> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <p><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</p> <p><input type="checkbox"/> More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</p> <p><input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</p> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	Cat. II Cat. III
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

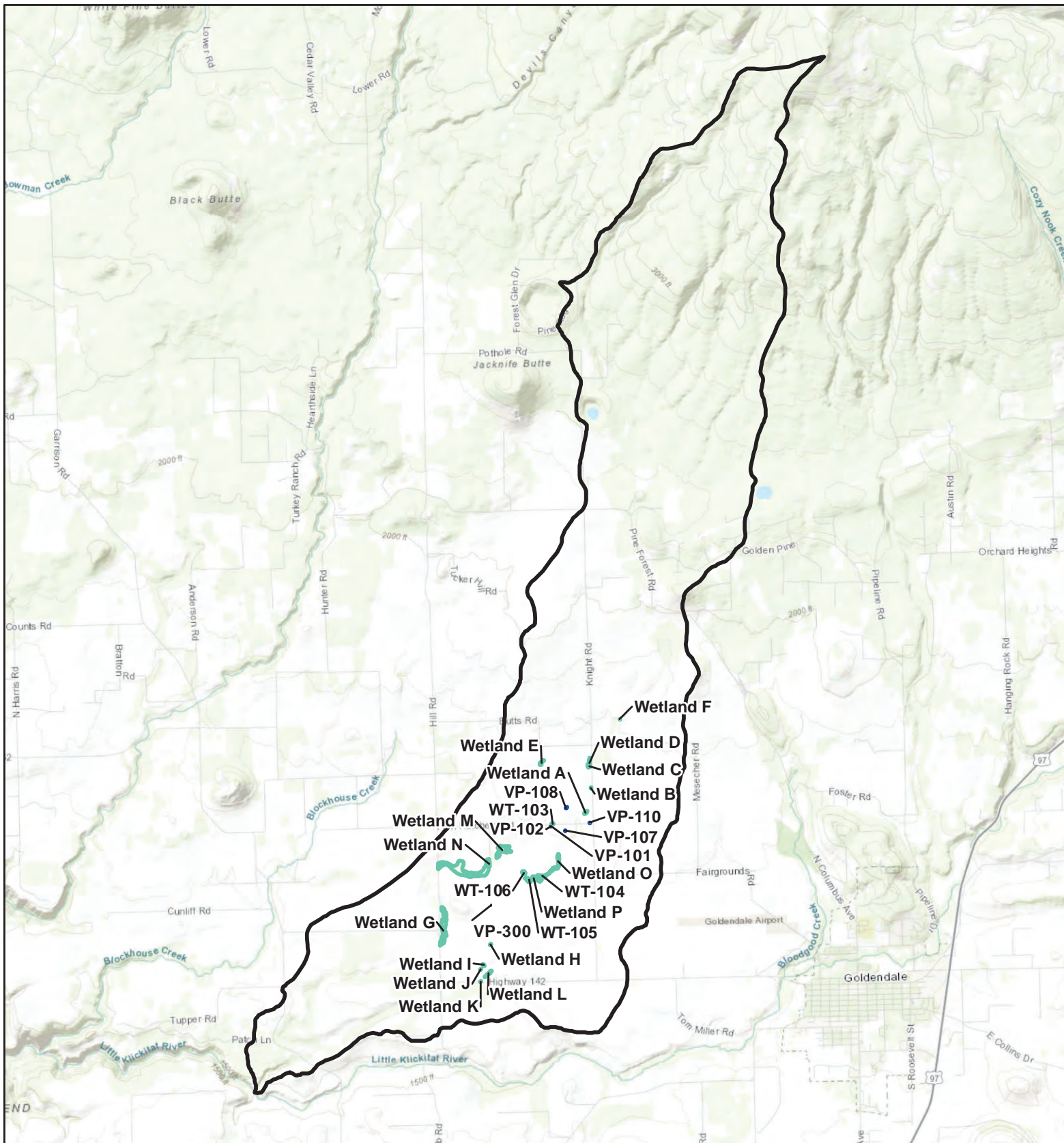
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

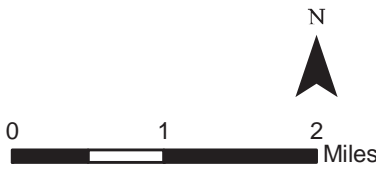
- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

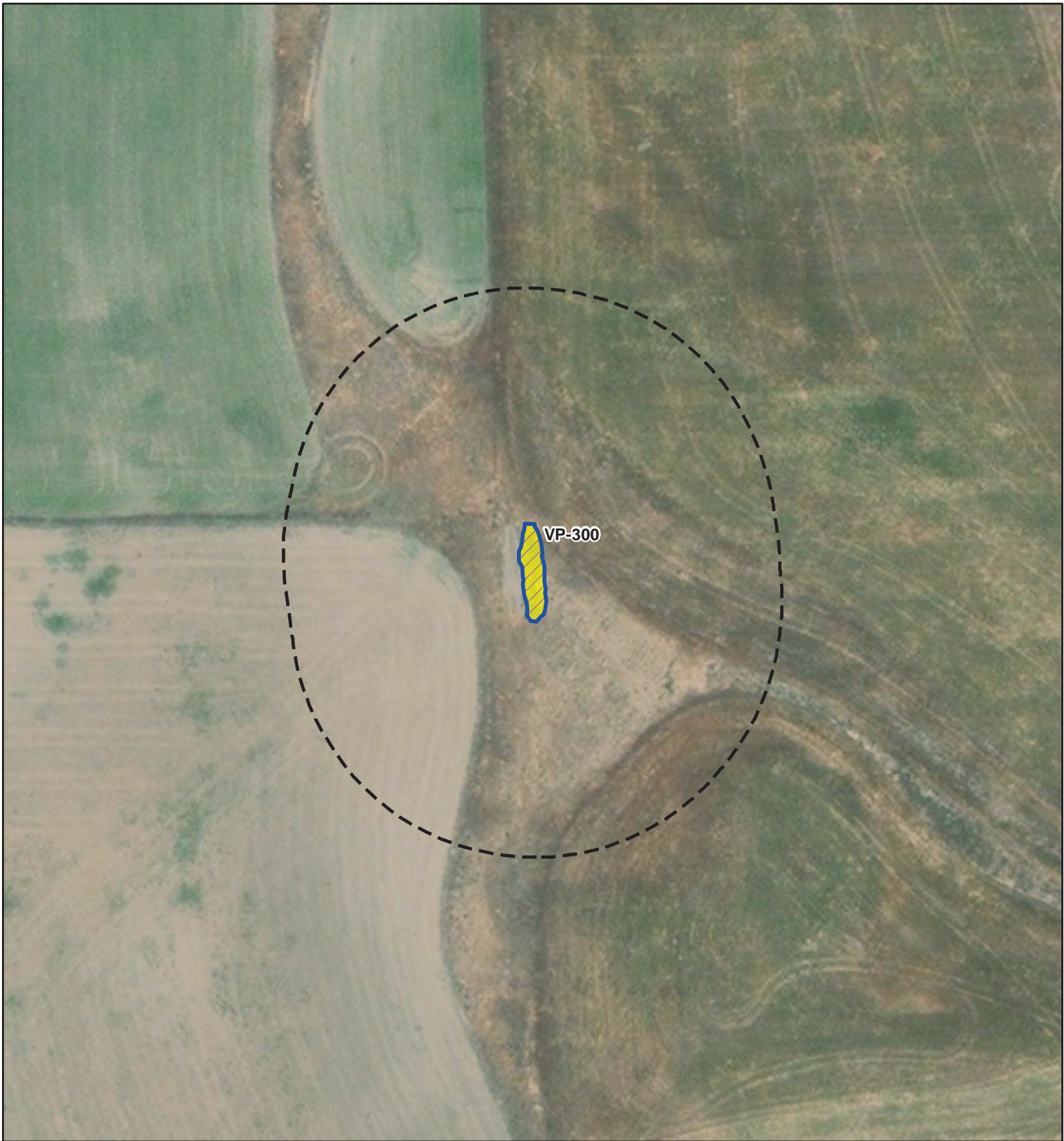


- Vernal Pool
- Wetland
- Contributing Basin



**Contributing Basin**

Carriger Solar, LLC Project  
Klickitat County, WA



Vernal Pool



150-foot Buffer

Cowardin Classification



PEM

Hydroperiod



Seasonally Inundated

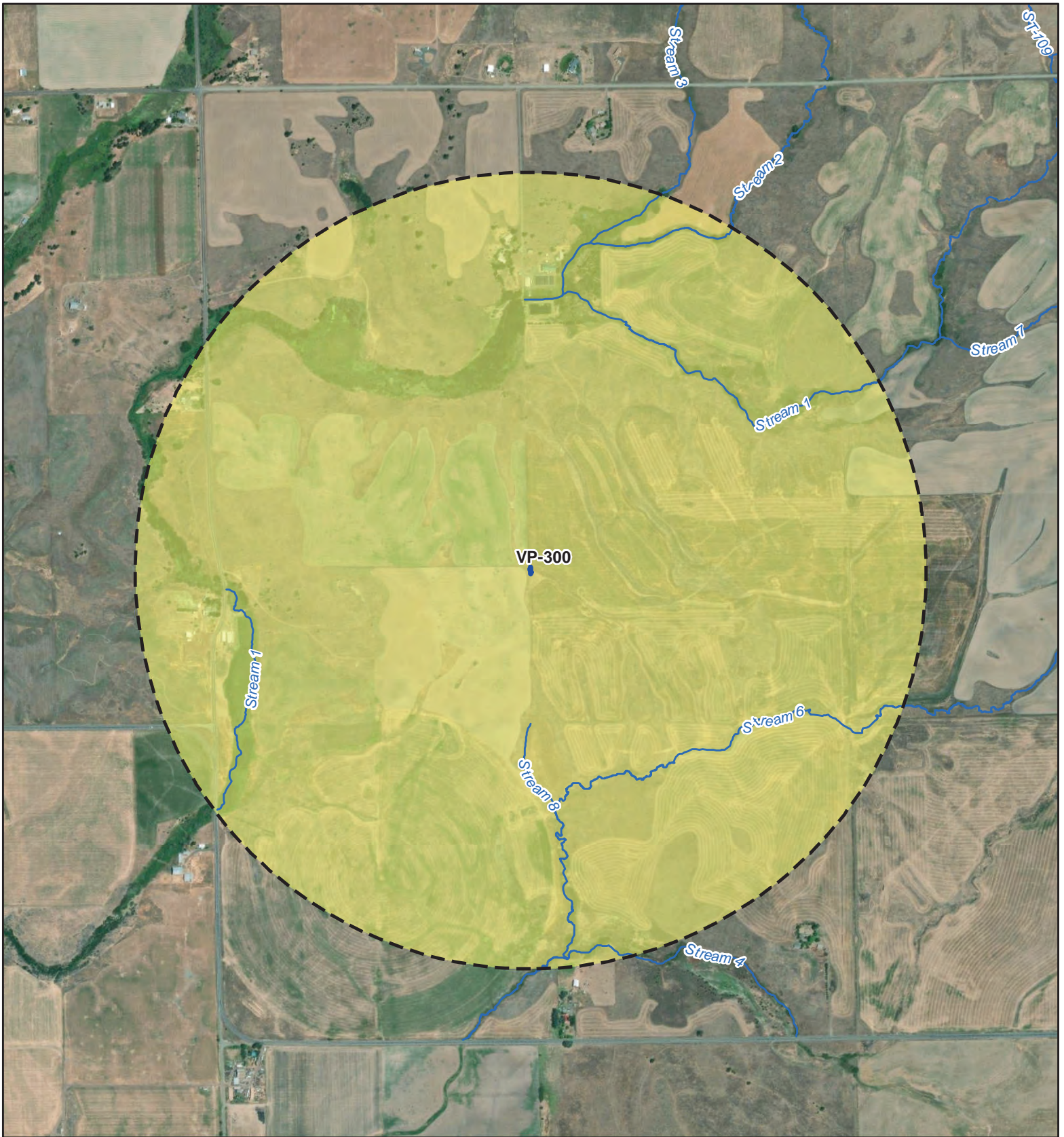






N



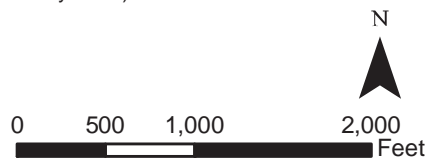
**VP-300  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



### VP-300 Land Use

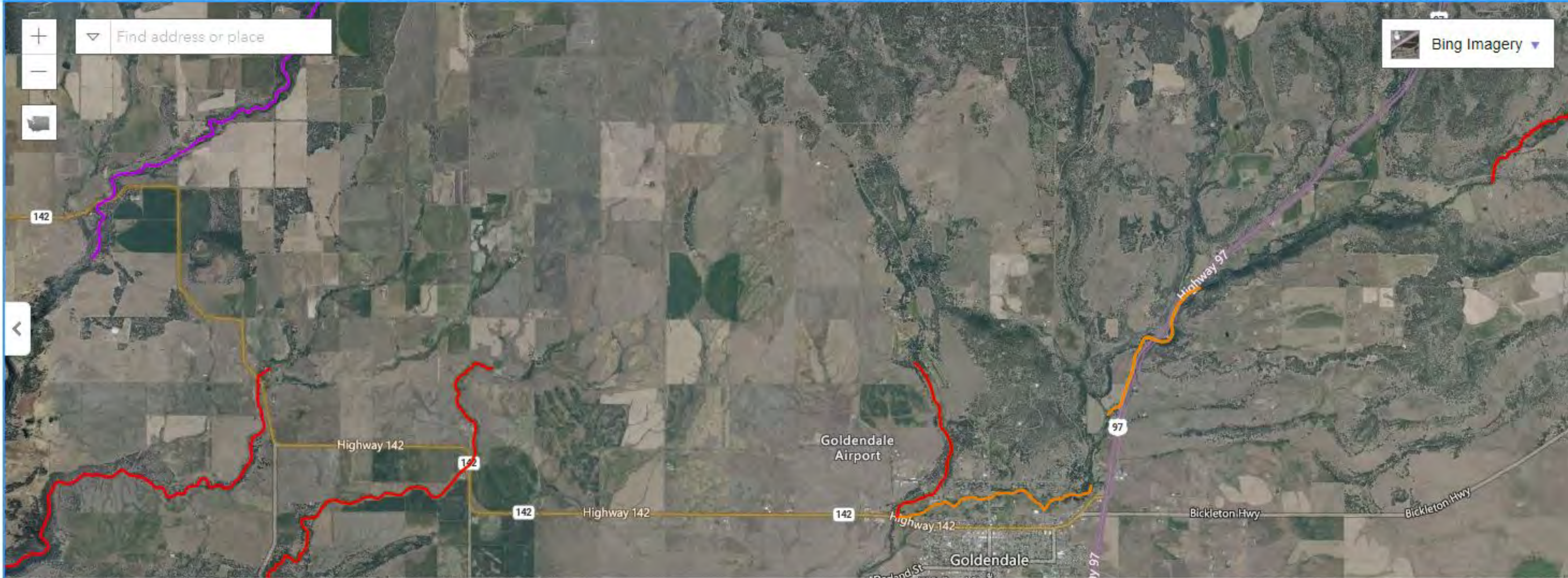
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number WT-103

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-103 Date of site visit: 6/27/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY IV** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		1
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	7

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 8 points = 4 points = 4 points = 0	<b>8</b>
D 4.2. <u>Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</u> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	<b>0</b>
Total for D 4		Add the points in the boxes above <b>8</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*


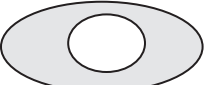

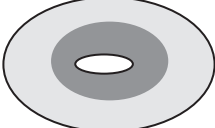
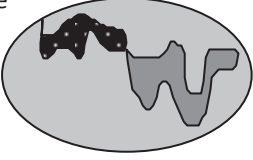

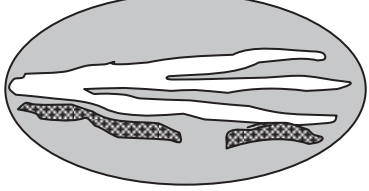
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	<b>0</b>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	<b>0</b>
Total for D 5		Add the points in the boxes above <b>0</b>

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	<b>0</b>
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	<b>0</b>
Total for D 6		Add the points in the boxes above <b>0</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>		1
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 1

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  &gt; 1/3 (33.3%) of 1 km Polygon points = 3                  20-33% of 1km Polygon points = 2                  10-19% of 1km Polygon points = 1                  &lt;10% of 1km Polygon points = 0</p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                  Undisturbed habitat &gt; 50% of Polygon points = 3                  Undisturbed habitat 10 - 50% and in 1-3 patches points = 2                  Undisturbed habitat 10 - 50% and &gt; 3 patches points = 1                  Undisturbed habitat &lt; 10% of Polygon points = 0</p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                  &gt; 50% of Polygon is high intensity land use points = (- 2)                  Does not meet criterion above points = 0</p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                  Yes = 3 No = 0</p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                  Site meets ANY of the following criteria: points = 2  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                  Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1                  Site does not meet any of the criteria above points = 0</p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

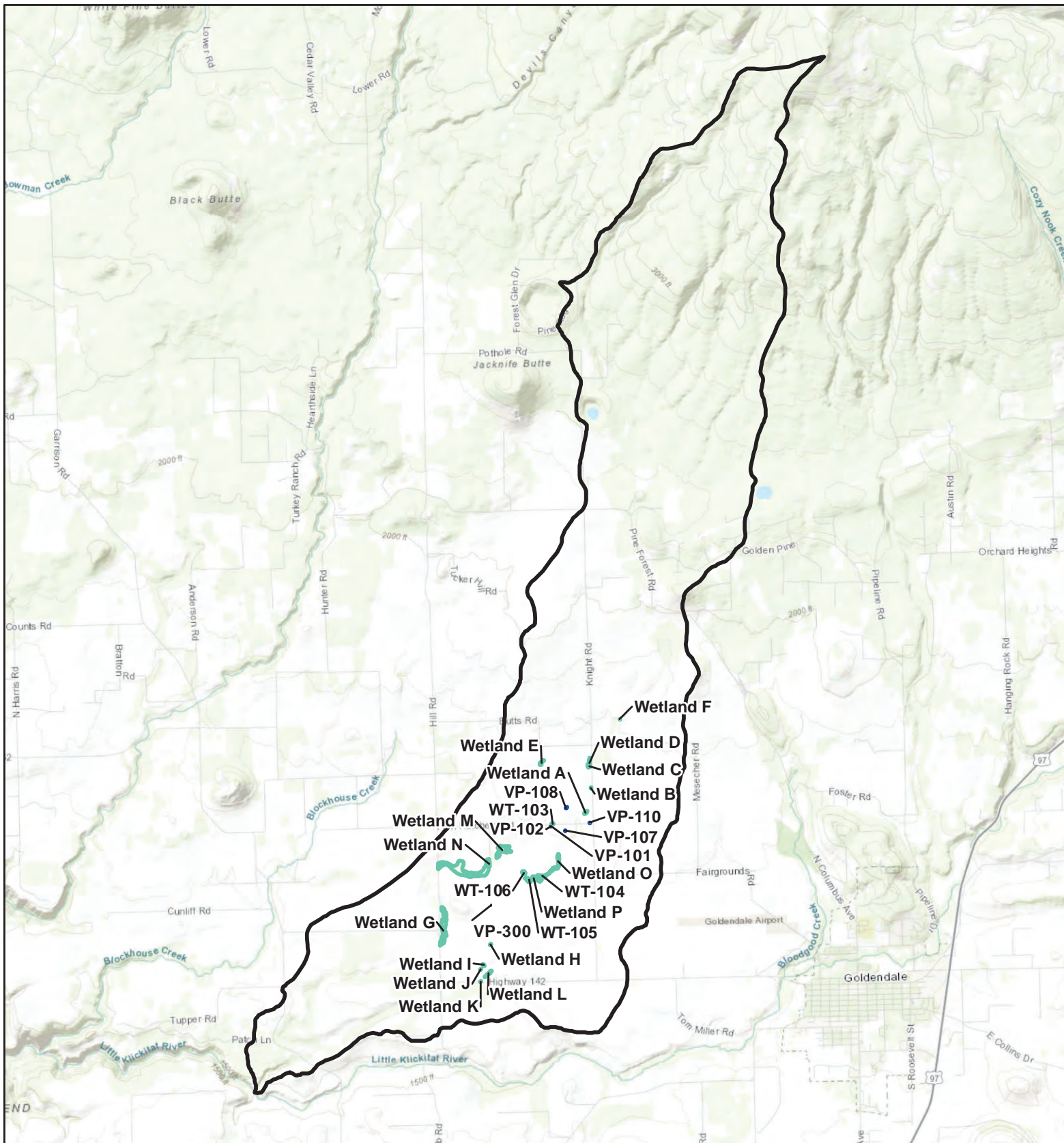
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

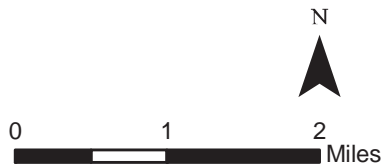
- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

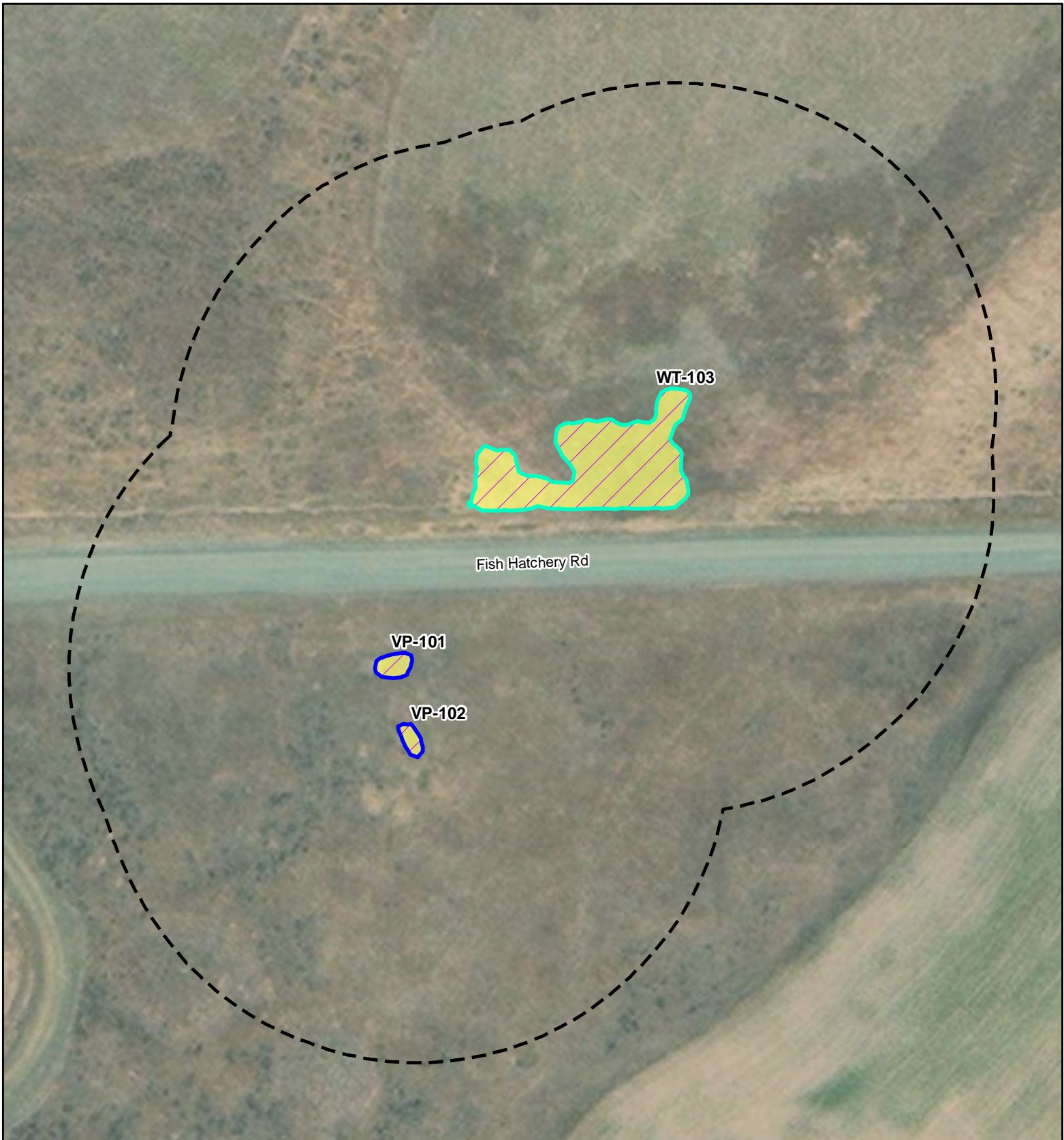


- Vernal Pool
- Wetland
- Contributing Basin



**Contributing Basin**

Carriger Solar, LLC Project  
Klickitat County, WA



Stream	<b>Cowardin Classification</b>
Vernal Pool	PEM
Wetland	<b>Hydroperiod</b>
150-foot Buffer	Seasonally Inundated

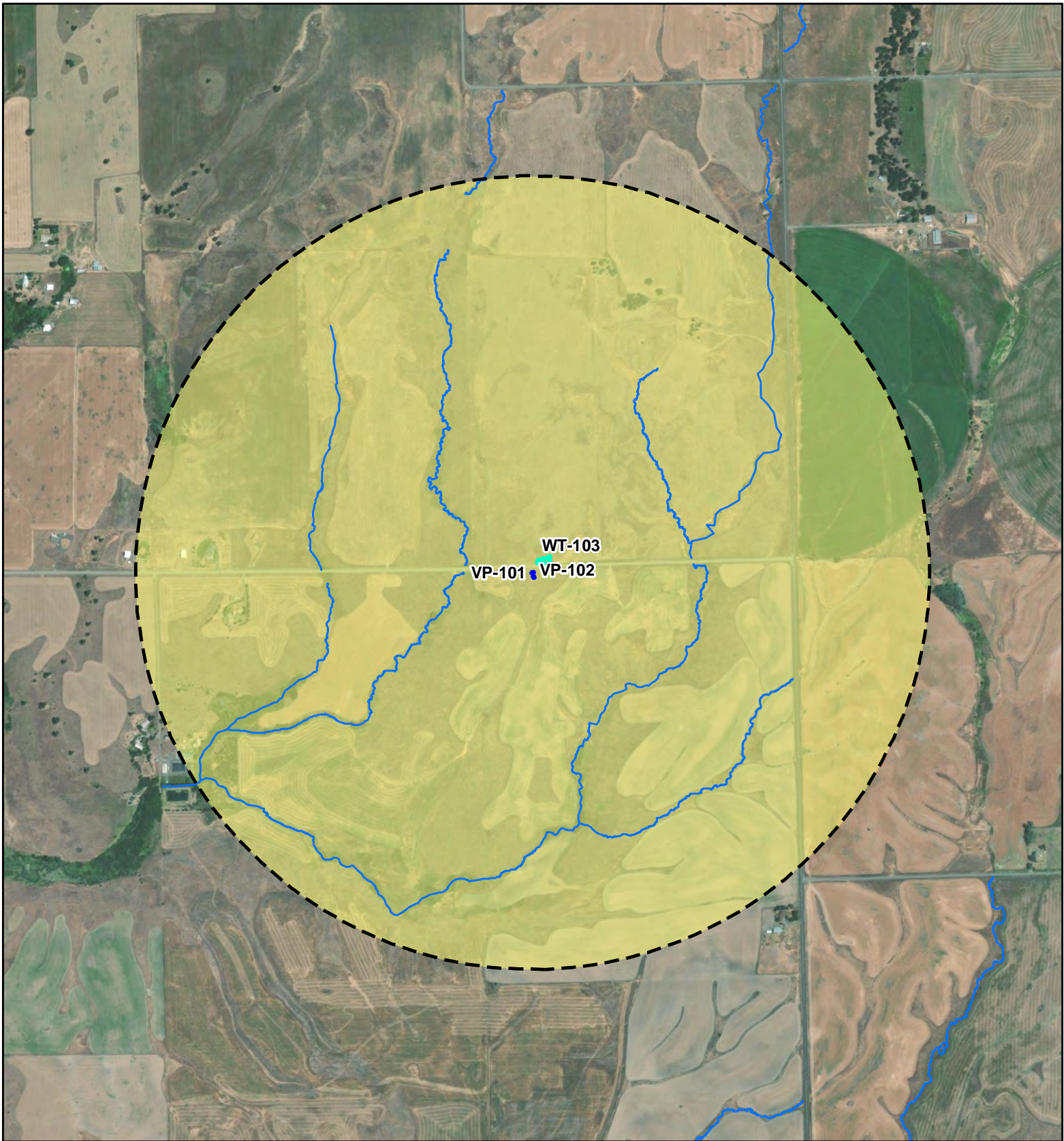
N

0      50      100  
Feet

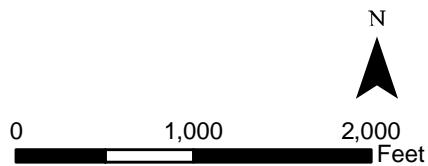
**TETRA TECH**

**VP-101, VP-102 & WT-103  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Vernal Pool
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**VP-101, VP-102, WT-103  
Land Use**

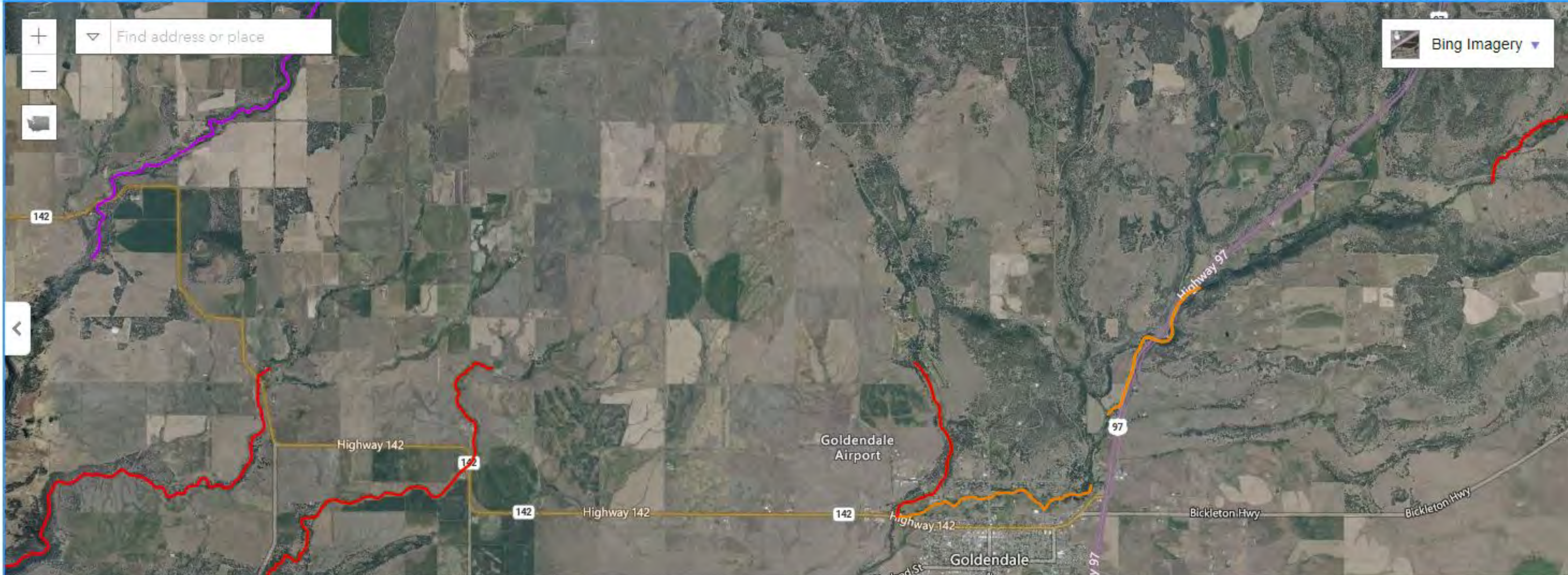
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number WT-104

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-104 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY** III (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- X Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <b>L</b>	H <b>M</b> L	H <b>M</b> L	
Landscape Potential	H <b>M</b> L	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>	<b>5</b>	<b>6</b>	<b>17</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		1
Depressions cover > $\frac{1}{3}$ area of wetland	points = 6	
Depressions cover > $\frac{1}{10}$ area of wetland	points = 3	
Depressions present but cover < $\frac{1}{10}$ area of wetland	points = 1	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; <b>not</b> Cowardin classes):		2
Forest or shrub > $\frac{2}{3}$ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3}$ - $\frac{2}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants > $\frac{2}{3}$ area of wetland	points = 5	
Ungrazed herbaceous plants $\frac{1}{3}$ - $\frac{2}{3}$ area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous < $\frac{1}{3}$ area of wetland	points = 0	
Total for R 1	Add the points in the boxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants	Yes = 1 No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions		0
R 2.1-R 2.4? Source _____	Yes = 1 No = 0	
Total for R 2	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3-6 = H 1 or 2 = M 0 = L *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 No = 0	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the drainage in which wetland is found.</i>	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that site functions to reduce flooding and stream erosion		
<b>R 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 2 <span style="float: right;">points = 10</span> If the ratio is 1-2 <span style="float: right;">points = 8</span> If the ratio is ½-<1 <span style="float: right;">points = 4</span> If the ratio is ¼-< ½ <span style="float: right;">points = 2</span> If the ratio is < ¼ <span style="float: right;">points = 1</span>	<b>4</b>	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</i> Forest or shrub for more than 2/3 the area of the wetland <span style="float: right;">points = 6</span> Forest or shrub for >1/3 area OR emergent plants > 2/3 area <span style="float: right;">points = 4</span> Forest or shrub for > 1/10 area OR emergent plants > 1/3 area <span style="float: right;">points = 2</span> Plants do not meet above criteria <span style="float: right;">points = 0</span>	<b>2</b>	
Total for R 4	Add the points in the boxes above	<b>6</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*




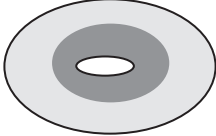
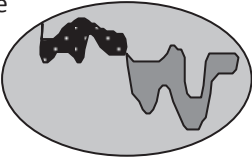

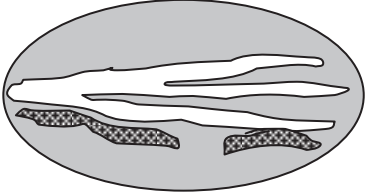
<b>R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
R 5.1. Is the stream or river adjacent to the wetland downcut? <span style="float: right;">Yes = 0 No = 1</span>	<b>1</b>	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
R 5.3. Is the up-gradient stream or river controlled by dams? <span style="float: right;">Yes = 0 No = 1</span>	<b>1</b>	
Total for R 5	Add the points in the boxes above	<b>2</b>

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

<b>R 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources <span style="float: right;">points = 2</span> Surface flooding problems are in a basin farther down-gradient <span style="float: right;">points = 1</span> No flooding problems anywhere downstream <span style="float: right;">points = 0</span>	<b>0</b>	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? <span style="float: right;">Yes = 2 No = 0</span>	<b>0</b>	
Total for R 6	Add the points in the boxes above	<b>0</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*



<p style="text-align: center;"><b>These questions apply to wetlands of all HGM classes.</b></p> <p><b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat</p>		(only 1 score per box)
<p>H 1.0. Does the wetland have the potential to provide habitat for many species?</p>		1
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is &gt;= ¼ ac or &gt;= 10% of the wetland if wetland is &lt; 2.5 ac.</i></p> <p> <input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have &gt; 30% cover  <input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with &gt;30% cover  <input type="checkbox"/> Emergent plants &gt; 40 in (&gt; 100 cm) high are the highest layer with &gt;30% cover  <input type="checkbox"/> Scrub-shrub (areas where shrubs have &gt;30% cover)  <input type="checkbox"/> Forested (areas where trees have &gt;30% cover)                 </p> <p style="text-align: right;">                     4 or more checks: points = 3                      3 checks: points = 2                      2 checks: points = 1                      1 check: points = 0                 </p>		1
<p>H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span></p>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b> <span style="float: right;">Yes = 3 No = 0</span></p>		3
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>6</u></p> <p style="text-align: right;">Scoring: &gt; 9 species: points = 2                      4-9 species: points = 1                      &lt; 4 species: points = 0</p>		1
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 2

H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1	
Total for H 1	Add the points in the boxes above	8

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

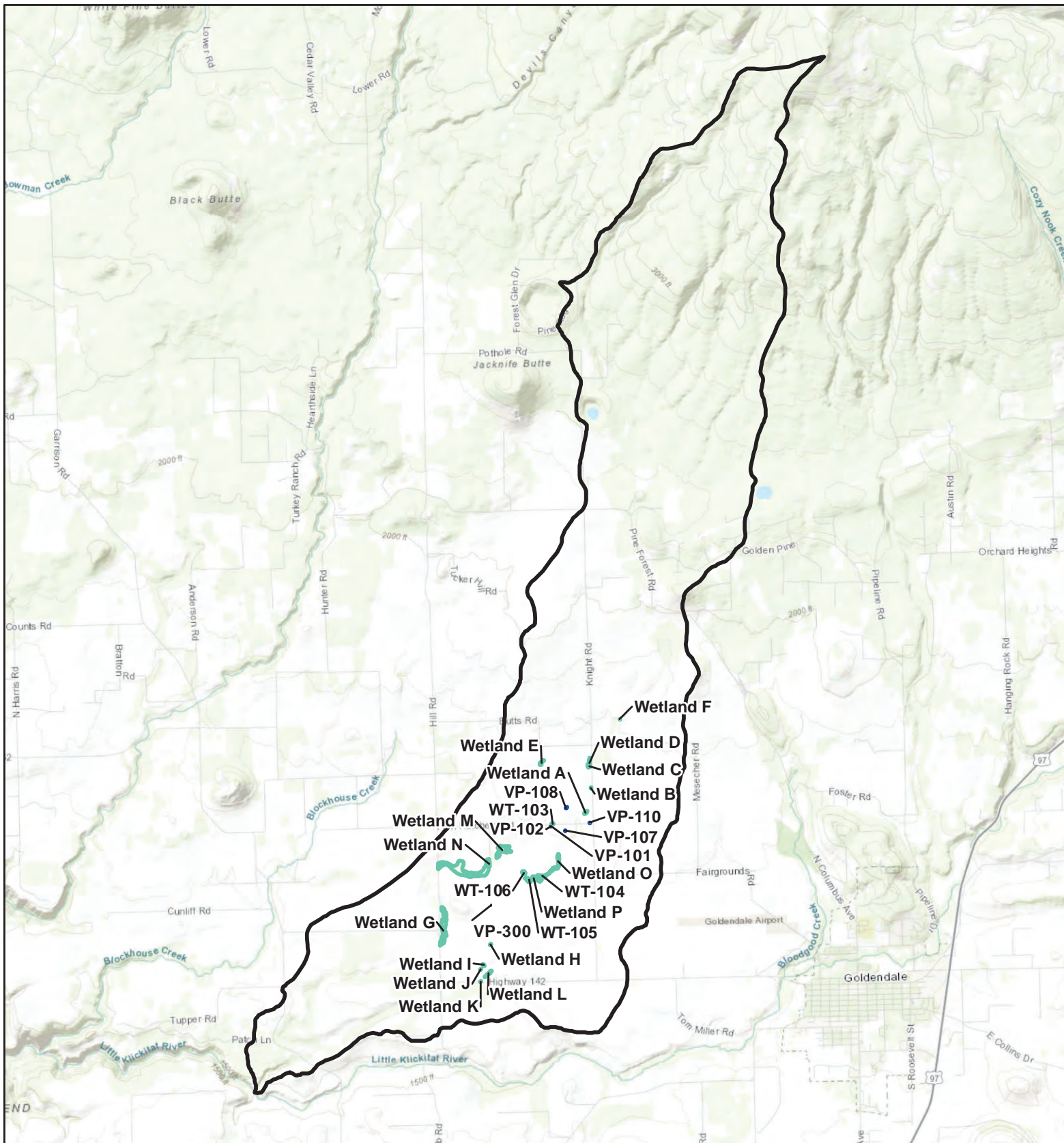
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

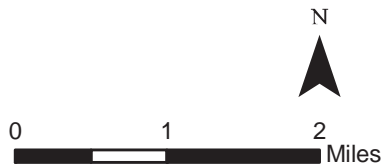
- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

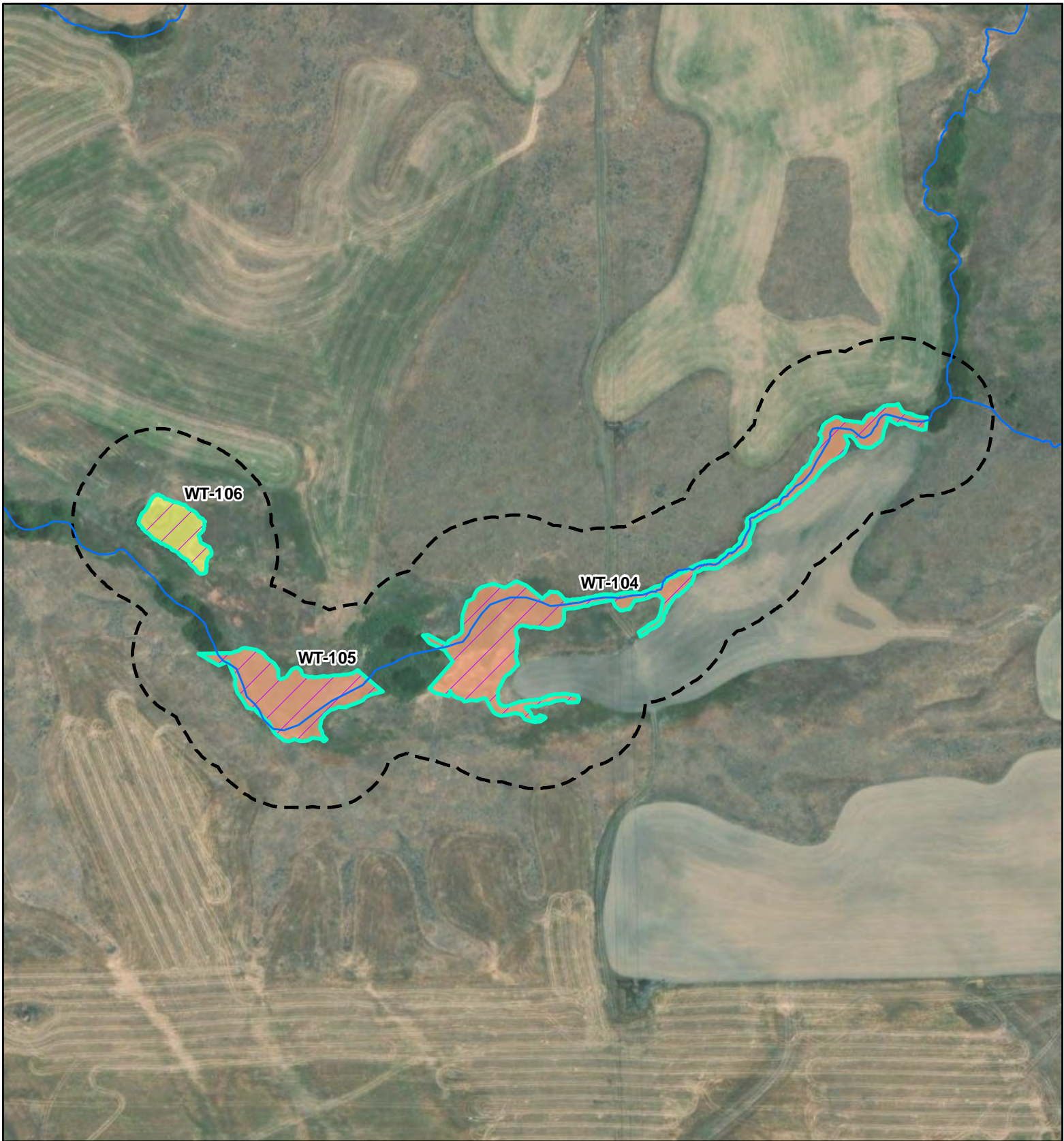


- Vernal Pool
- Wetland
- Contributing Basin



**Contributing Basin**

Carriger Solar, LLC Project  
Klickitat County, WA



— Stream

▭ Wetland

⋯ 150-foot Buffer

Cowardin Classification

▭ PEM

▭ R4UB3

Hydroperiod

▨ Seasonally Inundated

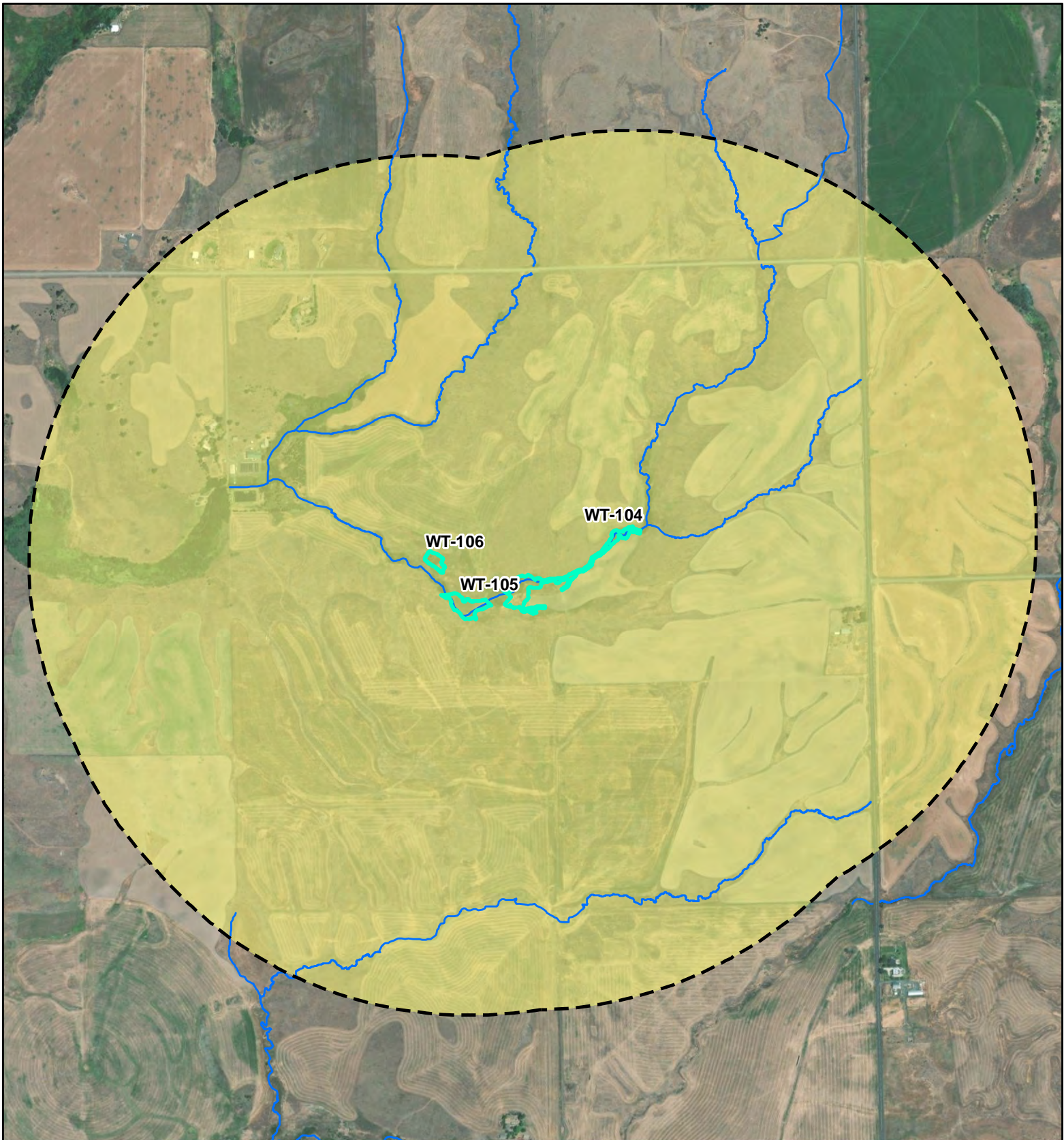


0 100 200  
Feet

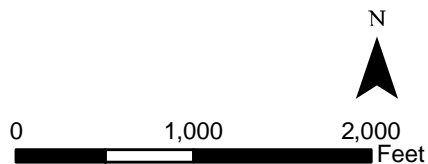


**WT-104, WT-105 & WT-106  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**WT-104, WT-105, WT-106  
Land Use**

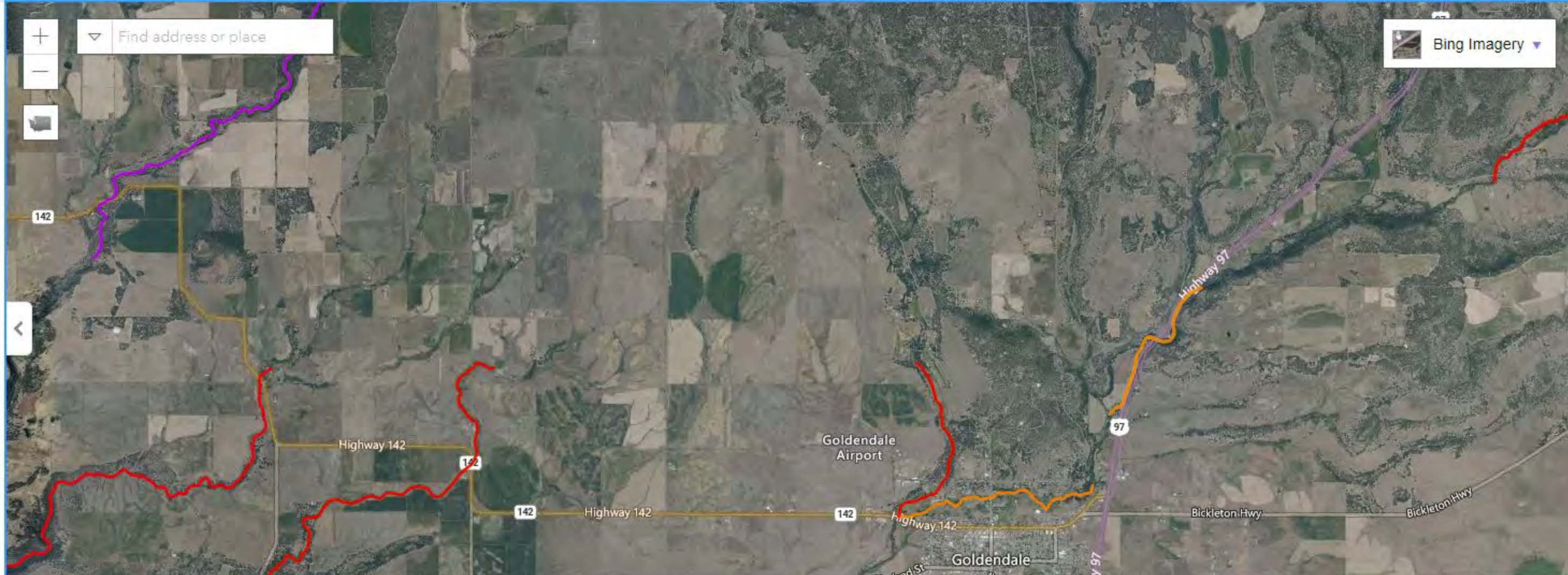
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number WT-105

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-105 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY** III (based on functions X or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- X Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <b>L</b>	H <b>M</b> L	H <b>M</b> L	
Landscape Potential	H <b>M</b> L	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>17</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		1
Depressions cover > <sup>1</sup> / <sub>3</sub> area of wetland	points = 6	
Depressions cover > <sup>1</sup> / <sub>10</sub> area of wetland	points = 3	
Depressions present but cover < <sup>1</sup> / <sub>10</sub> area of wetland	points = 1	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; <b>not</b> Cowardin classes):		2
Forest or shrub > <sup>2</sup> / <sub>3</sub> the area of the wetland	points = 10	
Forest or shrub <sup>1</sup> / <sub>3</sub> - <sup>2</sup> / <sub>3</sub> area of the wetland	points = 5	
Ungrazed, herbaceous plants > <sup>2</sup> / <sub>3</sub> area of wetland	points = 5	
Ungrazed herbaceous plants <sup>1</sup> / <sub>3</sub> - <sup>2</sup> / <sub>3</sub> area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous < <sup>1</sup> / <sub>3</sub> area of wetland	points = 0	
Total for R 1	Add the points in the boxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants	Yes = 1 No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions		0
R 2.1-R 2.4? Source _____	Yes = 1 No = 0	
Total for R 2	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3-6 = H 1 or 2 = M 0 = L *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 No = 0	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the drainage in which wetland is found.</i>	Yes = 2 No = 0	2
Total for R 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that site functions to reduce flooding and stream erosion		
<b>R 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 2 <span style="float: right;">points = 10</span> If the ratio is 1-2 <span style="float: right;">points = 8</span> If the ratio is ½-<1 <span style="float: right;">points = 4</span> If the ratio is ¼-< ½ <span style="float: right;">points = 2</span> If the ratio is < ¼ <span style="float: right;">points = 1</span>	<b>4</b>	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</i> Forest or shrub for more than 2/3 the area of the wetland <span style="float: right;">points = 6</span> Forest or shrub for >1/3 area OR emergent plants > 2/3 area <span style="float: right;">points = 4</span> Forest or shrub for > 1/10 area OR emergent plants > 1/3 area <span style="float: right;">points = 2</span> Plants do not meet above criteria <span style="float: right;">points = 0</span>	<b>2</b>	
Total for R 4	Add the points in the boxes above	<b>6</b>

**Rating of Site Potential** If score is: \_\_\_12-16 = H \_\_\_6-11 = M \_\_\_0-5 = L

*Record the rating on the first page*

<b>R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
R 5.1. Is the stream or river adjacent to the wetland downcut? <span style="float: right;">Yes = 0 No = 1</span>	<b>1</b>	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? <span style="float: right;">Yes = 1 No = 0</span>	<b>0</b>	
R 5.3. Is the up-gradient stream or river controlled by dams? <span style="float: right;">Yes = 0 No = 1</span>	<b>1</b>	
Total for R 5	Add the points in the boxes above	<b>2</b>

**Rating of Landscape Potential** If score is: \_\_\_3 = H \_\_\_1 or 2 = M \_\_\_0 = L


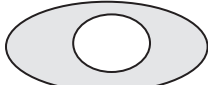

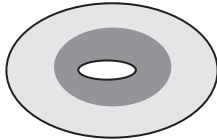
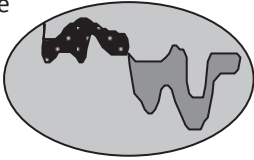
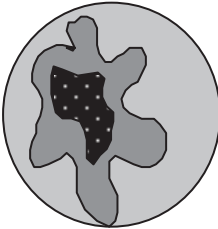
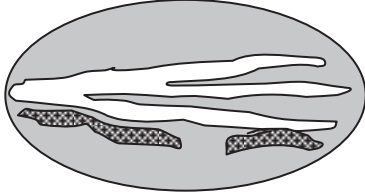
*Record the rating on the first page*

<b>R 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources <span style="float: right;">points = 2</span> Surface flooding problems are in a basin farther down-gradient <span style="float: right;">points = 1</span> No flooding problems anywhere downstream <span style="float: right;">points = 0</span>	<b>0</b>	
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? <span style="float: right;">Yes = 2 No = 0</span>	<b>0</b>	
Total for R 6	Add the points in the boxes above	<b>0</b>

**Rating of Value** If score is: \_\_\_2-4 = H \_\_\_1 = M \_\_\_0 = L

*Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $>30\%$ cover) <span style="float: right;">4 or more checks: points = 3</span> <input type="checkbox"/> Forested (areas where trees have $>30\%$ cover) <span style="float: right;">3 checks: points = 2</span> <span style="float: right;">2 checks: points = 1</span> <span style="float: right;">1 check: points = 0</span>	1	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 No = 0	0
H 1.3. <u>Surface water</u>		
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b> Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b> Yes = 3 No = 0		3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>4</u> Scoring: $> 9$ species: points = 2 4-9 species: points = 1 $< 4$ species: points = 0		1
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i>		Figure__ 2
 <div style="display: inline-block; margin: 0 40px;">  </div> <div style="display: inline-block; margin: 0 40px;">  </div> <div style="display: inline-block;">  </div>		
All three diagrams in this row are <b>High = 3 points</b>   		Riparian braided channels with 2 classes

H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1	
Total for H 1	Add the points in the boxes above	8

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

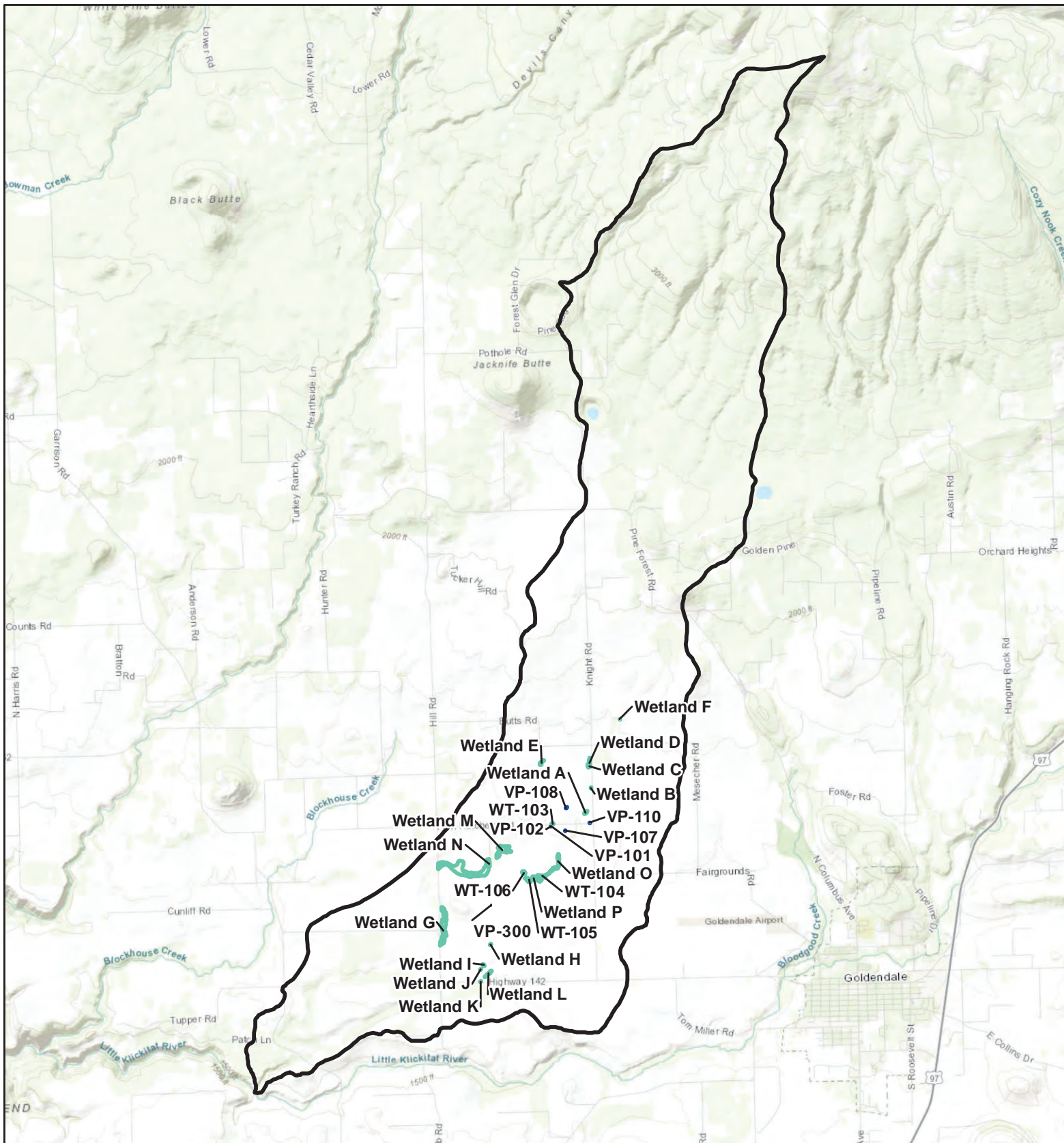
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

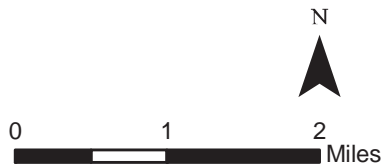
- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

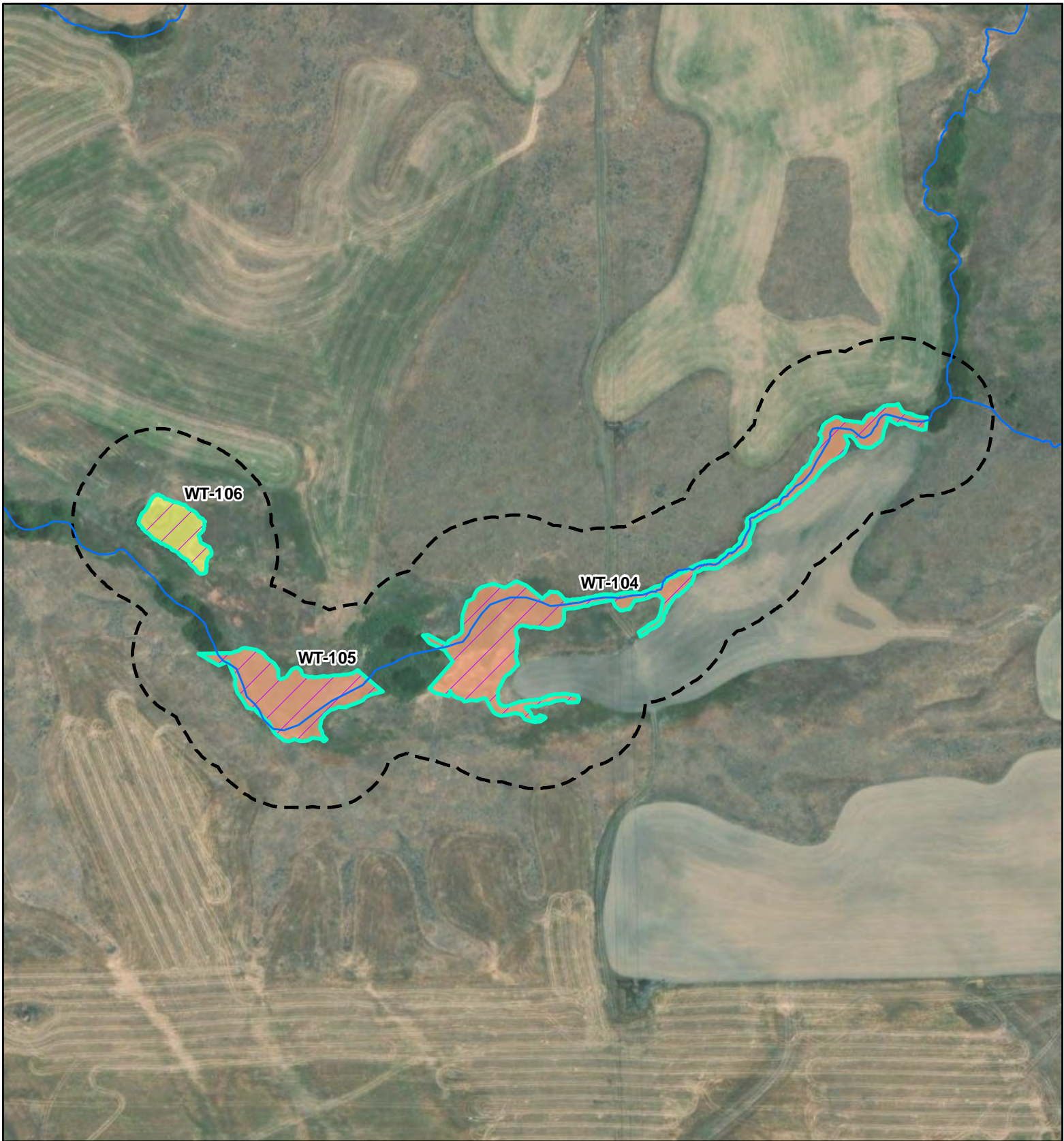


- Vernal Pool
- Wetland
- Contributing Basin



### Contributing Basin

Carriger Solar, LLC Project  
Klickitat County, WA



— Stream

▭ Wetland

⋯ 150-foot Buffer

Cowardin Classification

▭ PEM

▭ R4UB3

Hydroperiod

▨ Seasonally Inundated

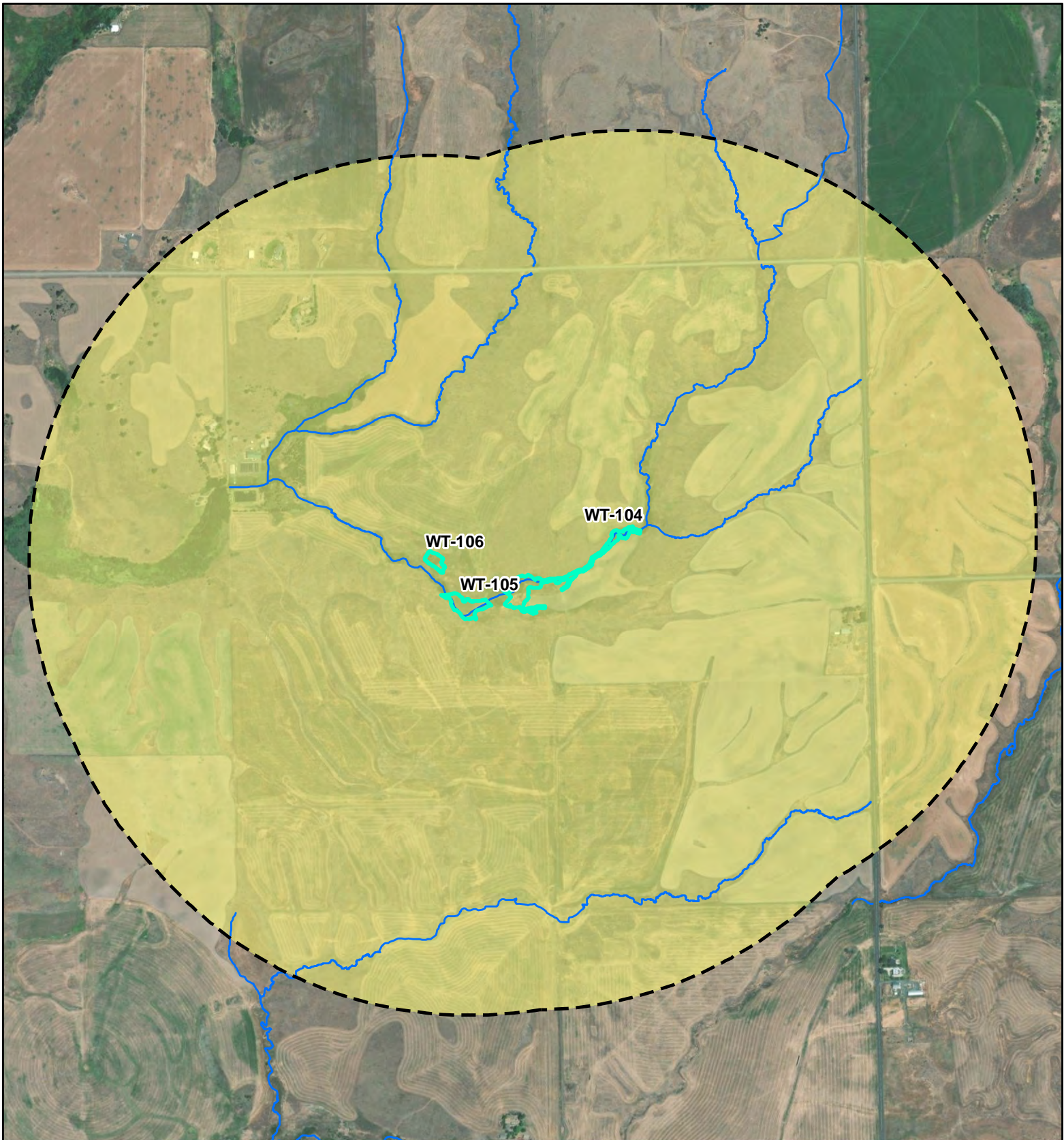


0 100 200  
Feet

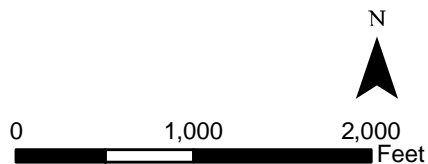


**WT-104, WT-105 & WT-106  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**WT-104, WT-105, WT-106  
Land Use**

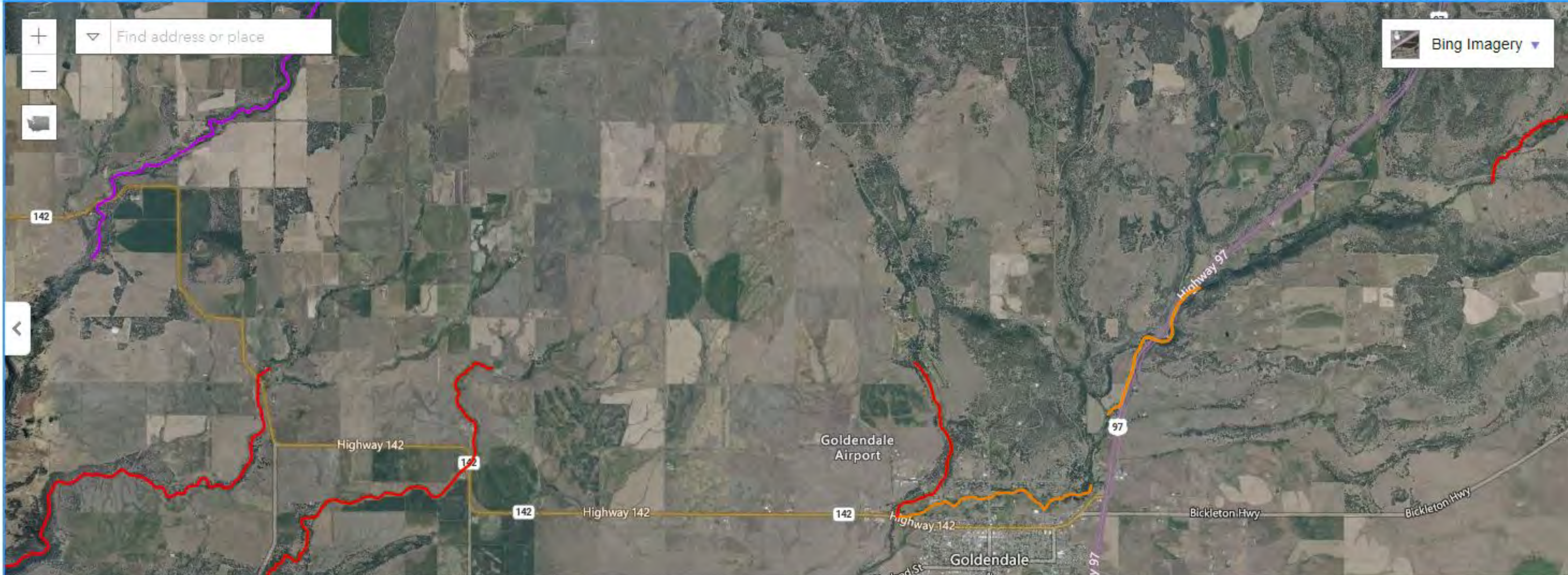
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number WT-106

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-106 Date of site visit: 6/28/22  
 Rated by Jess Taylor and Katie Pyne Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY III** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	<b>H</b> M L	H <b>M</b> L	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>17</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		1
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		3
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	9

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>	points = 8 points = 4 points = 4 points = 0	<b>8</b>
D 4.2. <u>Depth of storage during wet periods:</u> <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).</i> Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	<b>4</b>
Total for D 4		Add the points in the boxes above <b>12</b>

**Rating of Site Potential** If score is: **12-16 = H** **6-11 = M** **0-5 = L** *Record the rating on the first page*


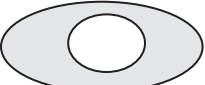

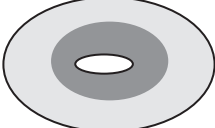
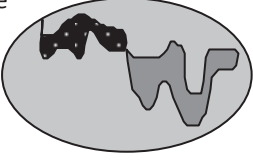

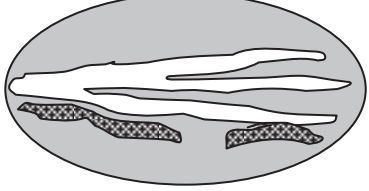
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	<b>0</b>
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	<b>0</b>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	<b>0</b>
Total for D 5		Add the points in the boxes above <b>0</b>

**Rating of Landscape Potential** If score is: **3 = H** **1 or 2 = M** **0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u> Choose the description that best matches conditions around the wetland being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i> The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	<b>0</b>
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	<b>0</b>
Total for D 6		Add the points in the boxes above <b>0</b>

**Rating of Value** If score is: **2-4 = H** **1 = M** **0 = L** *Record the rating on the first page*



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>		0
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>		3
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>5</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>		1
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><b>Moderate</b> = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 2

H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1
Total for H 1	Add the points in the boxes above 7

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0	3	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Yes = 3 No = 0	0	
Total for H 2	Add the points in the boxes above 6	

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: points = 2 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

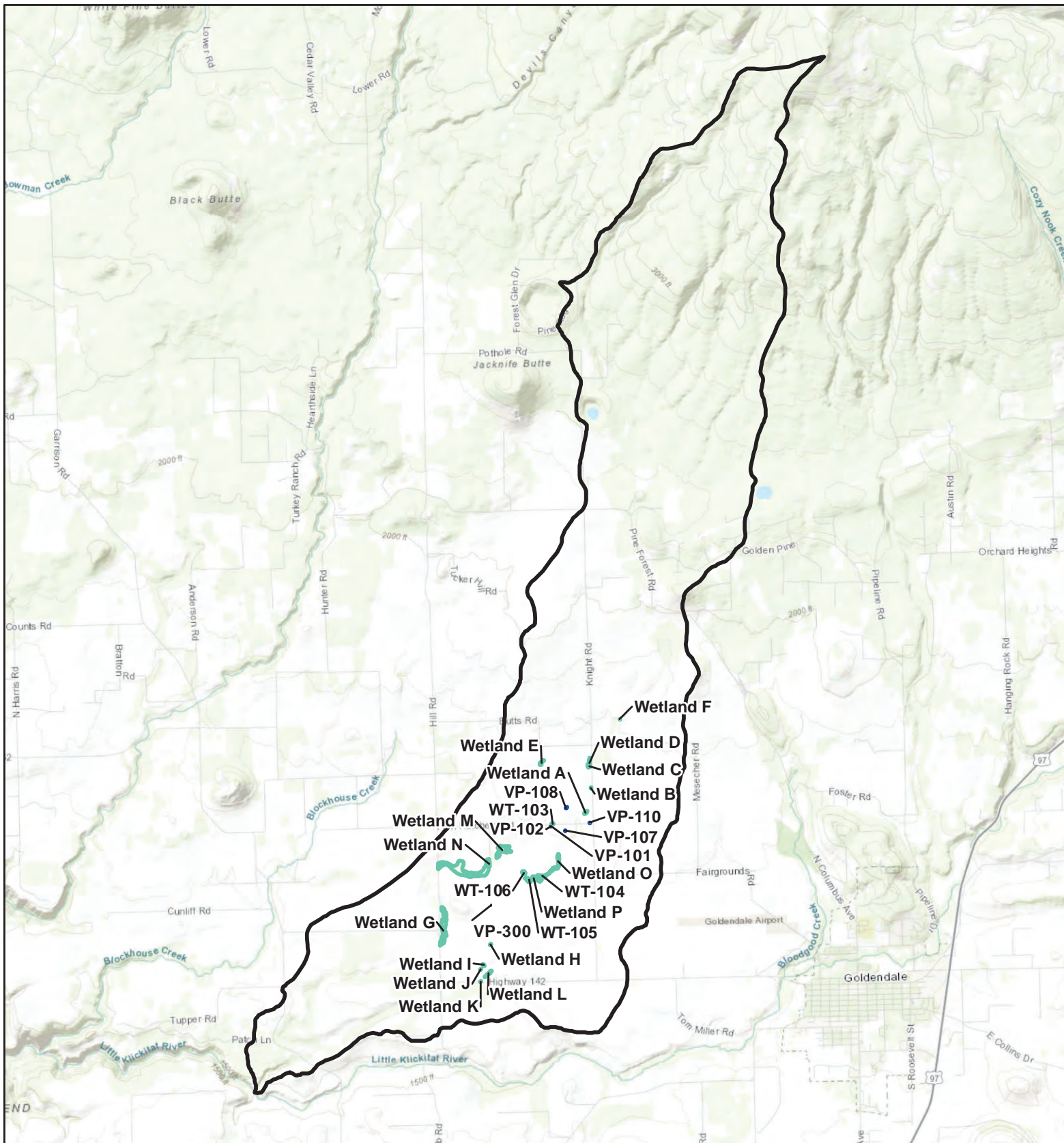
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

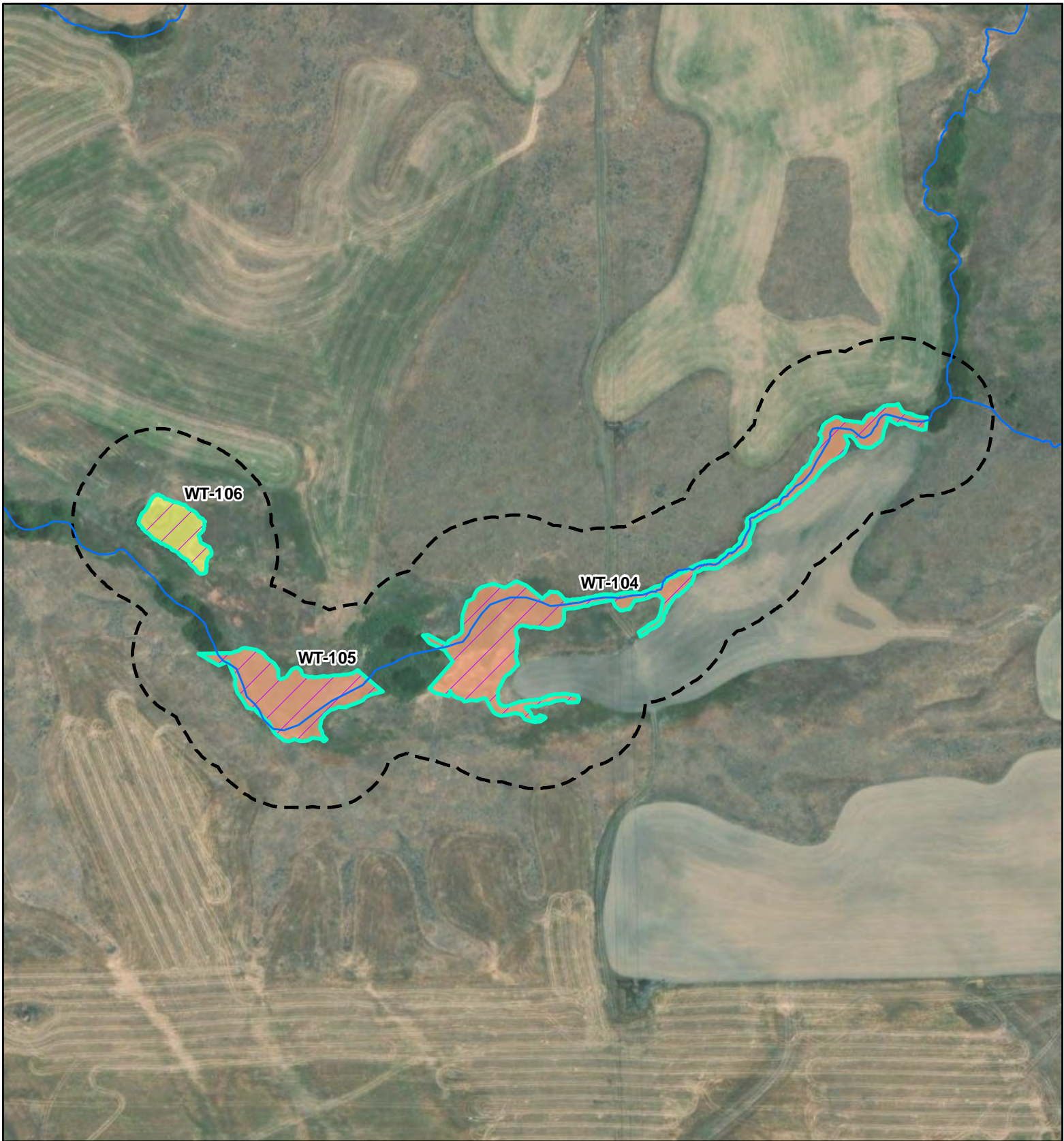


- Vernal Pool
- Wetland
- Contributing Basin



### Contributing Basin

Carriger Solar, LLC Project  
Klickitat County, WA



— Stream

▭ Wetland

⋯ 150-foot Buffer

Cowardin Classification

▭ PEM

▭ R4UB3

Hydroperiod

▨ Seasonally Inundated

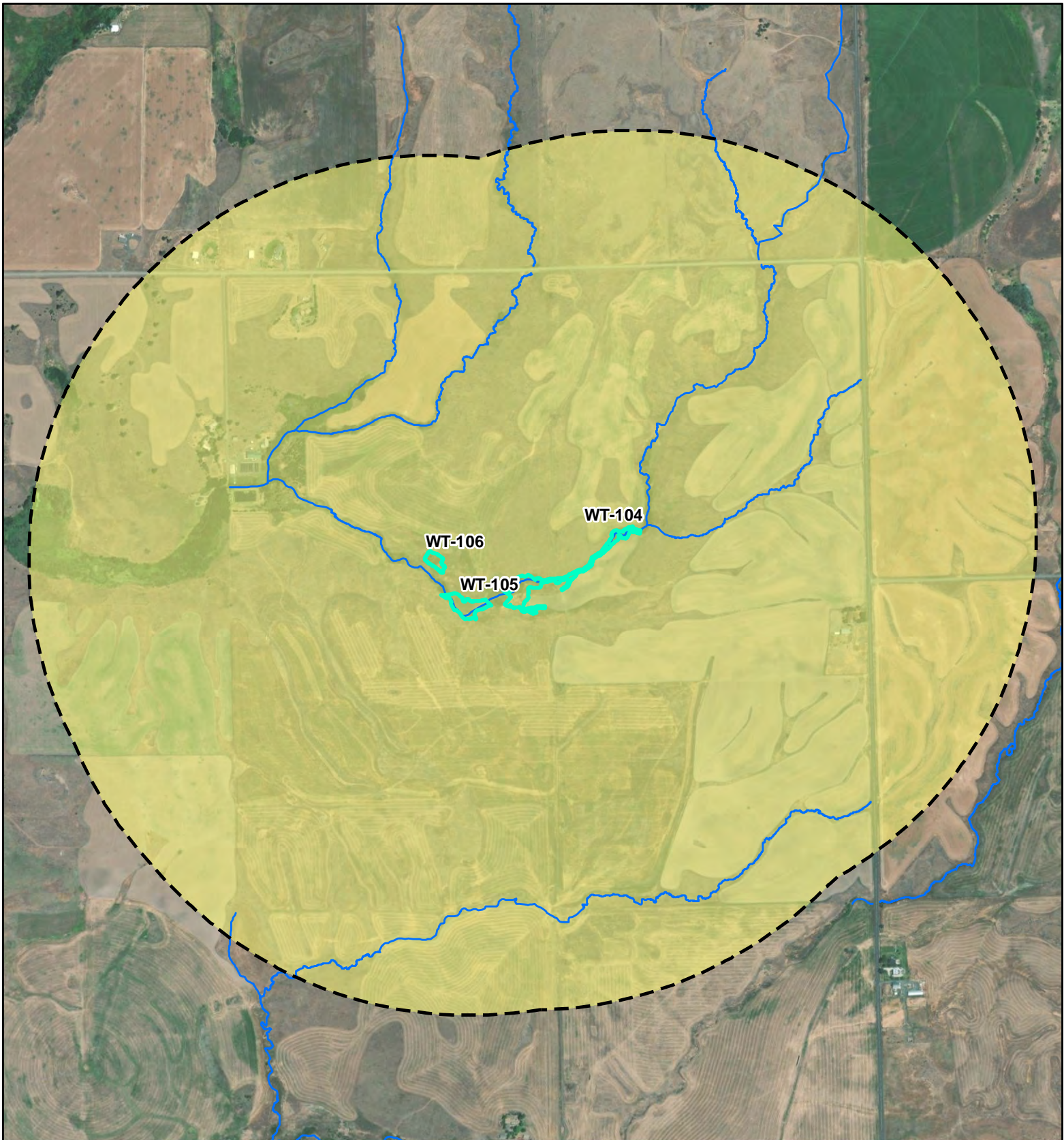


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Feet

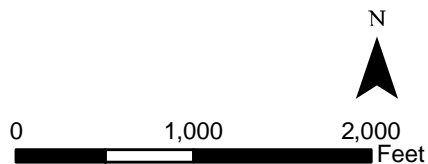


**WT-104, WT-105 & WT-106  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



- Stream
- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low



**WT-104, WT-105, WT-106  
Land Use**

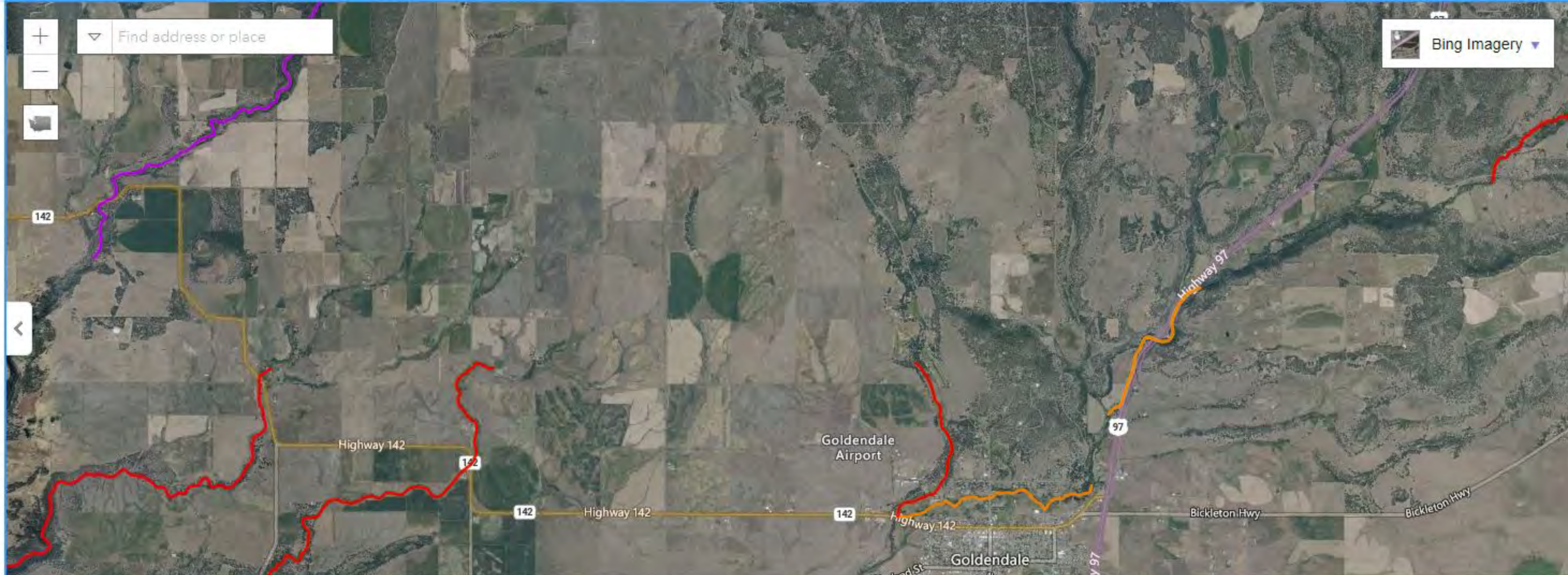
Carriger Solar, LLC Project  
Klickitat County, WA



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Wetland name or number WT-107

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-107 Date of site visit: 4/15/24  
 Rated by Summer Roberts, Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** III (based on functions \_\_\_ or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet <span style="float: right;">points = 8</span> Wetland has an intermittently flowing outlet <span style="float: right;">points = 4</span> Wetland has a highly constricted permanently flowing outlet <span style="float: right;">points = 4</span> Wetland has a permanently flowing unconfined surface outlet <span style="float: right;">points = 0</span> (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	8	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 8</span> Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 6</span> The wetland is a headwater wetland <span style="float: right;">points = 4</span> Seasonal ponding: 1 ft - < 2 ft <span style="float: right;">points = 4</span> Seasonal ponding: 6 in - < 1 ft <span style="float: right;">points = 2</span> Seasonal ponding: < 6 in or wetland has only saturated soils <span style="float: right;">points = 0</span>	0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page


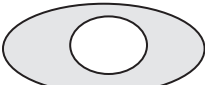

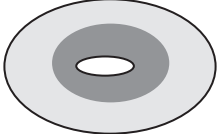
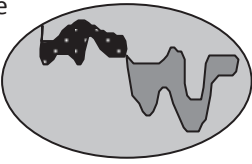

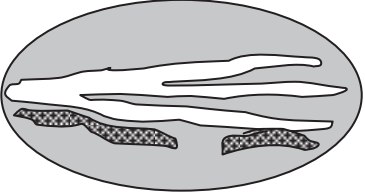
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? <span style="float: right;">Yes = 1 No = 0</span>	1	
Total for D 5	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>	0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? <span style="float: right;">Yes = 2 No = 0</span>	0	
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page



<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq</math> ¼ ac or <math>\geq</math> 10% of the wetland if wetland is &lt; 2.5 ac.</i></p> <p>___ Aquatic bed</p> <p>× ___ Emergent plants 0-12 in (0-30 cm) high are the highest layer and have &gt; 30% cover</p> <p>___ Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with &gt;30% cover</p> <p>___ Emergent plants &gt; 40 in (&gt; 100 cm) high are the highest layer with &gt;30% cover</p> <p>___ Scrub-shrub (areas where shrubs have &gt;30% cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p>___ Forested (areas where trees have &gt;30% cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>	0	
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>	0	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: &gt; 9 species: points = 2          4-9 species: points = 1  <b>&lt; 4 species: points = 0</b></p>	0	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>	Figure__ 0	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>                  20-33% of 1km Polygon <span style="float: right;">points = 2</span>                  10-19% of 1km Polygon <span style="float: right;">points = 1</span>                  &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %                  Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>                  Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>                  Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                  &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                  Yes = 3 No = 0</p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                  Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

*Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.*

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

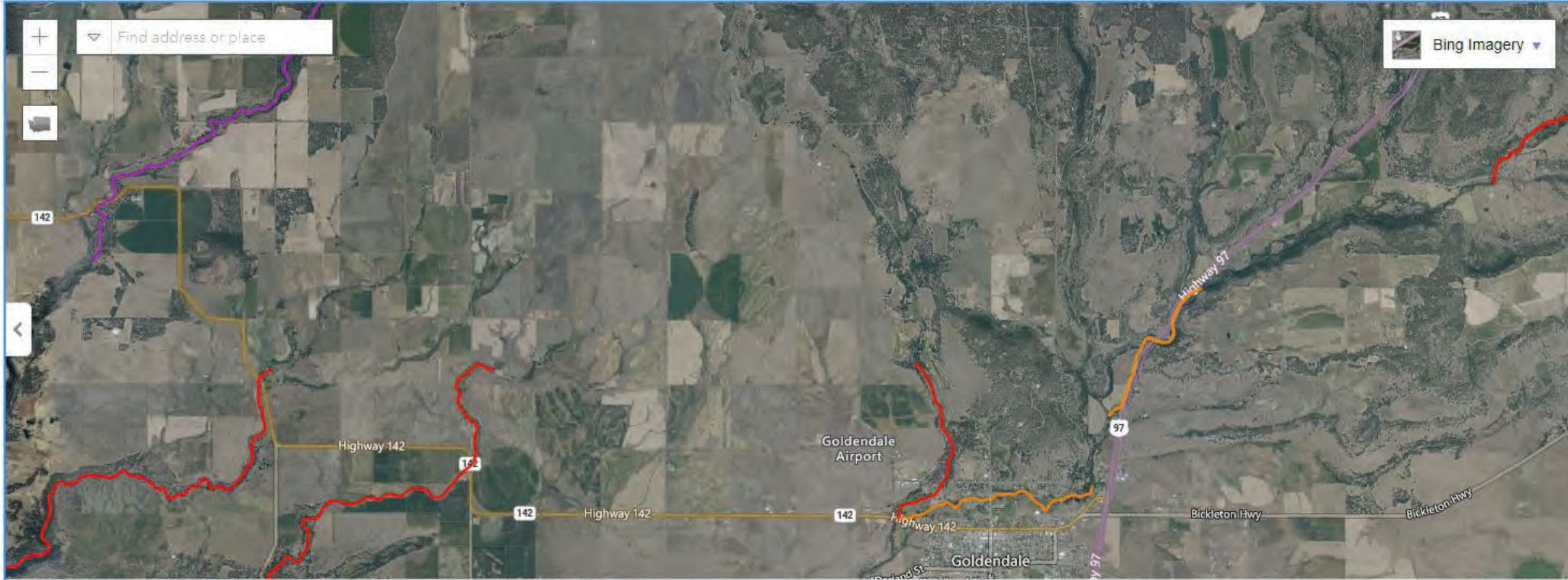
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



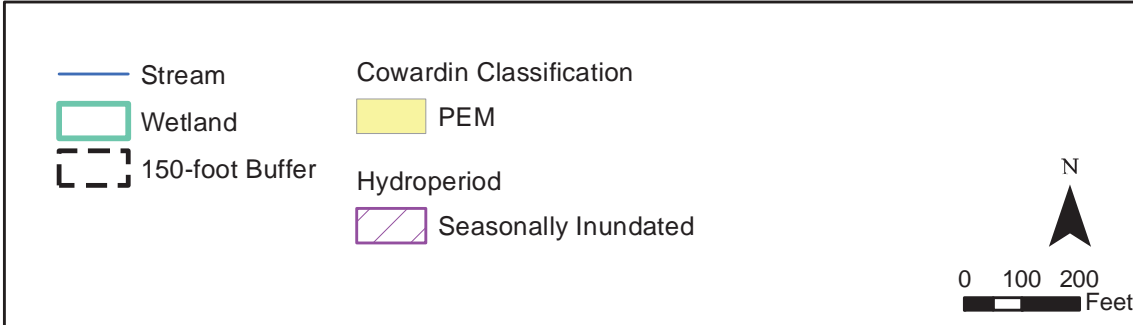
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



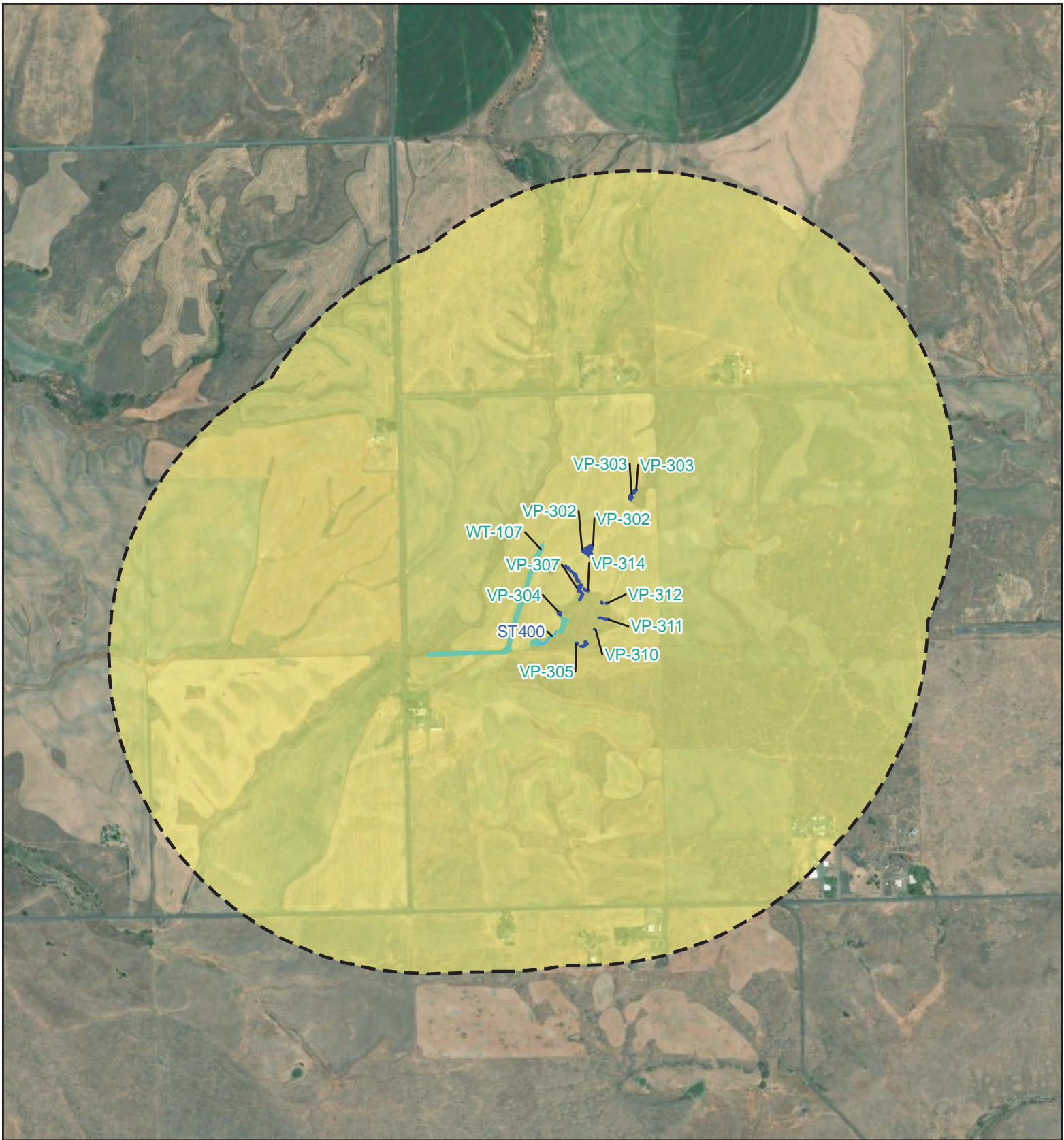
**TETRA TECH**






**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

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Carriger Solar, LLC Project  
Klickitat County, WA





-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

Wetland name or number WT-108

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-108 Date of site visit: 4/15/24  
 Rated by Summer Roberts, Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY III** (based on functions \_\_\_ or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems.		0
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page





<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?		
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3	
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3	
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0	
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0	
Total for H 2	Add the points in the boxes above	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

Wetland name or number \_\_\_\_\_

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

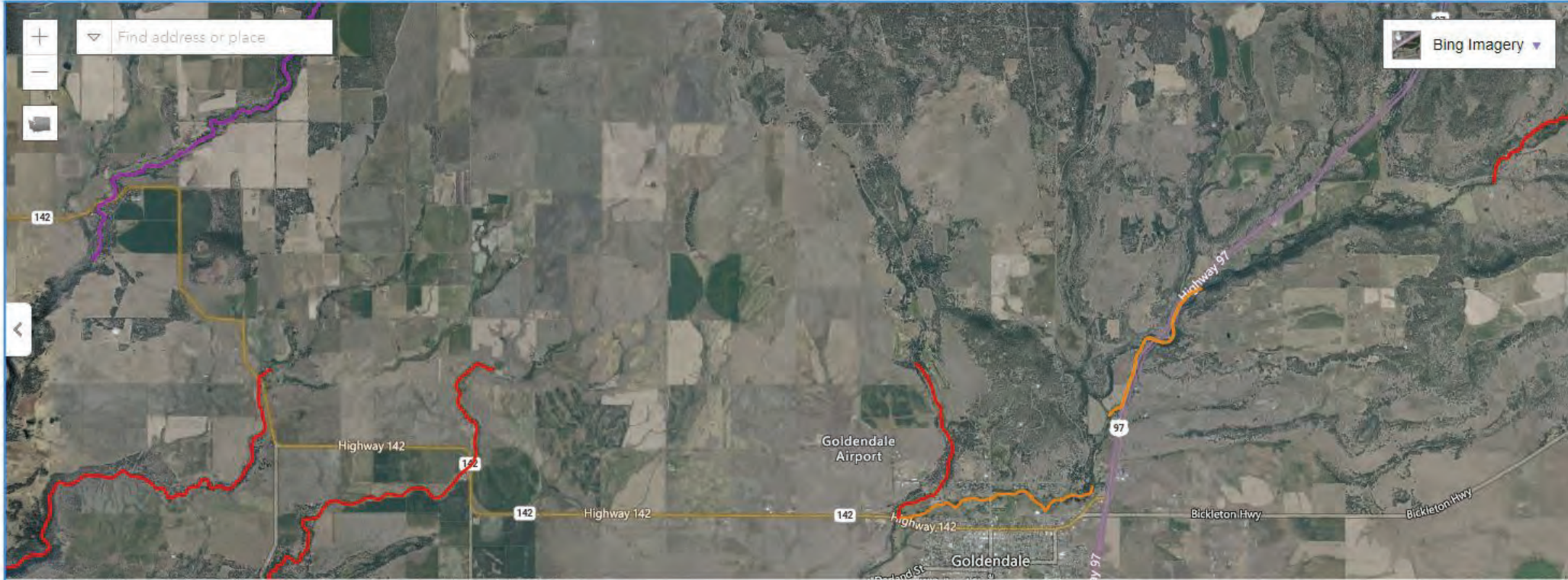
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



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## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



<p>— Stream</p> <p>▭ Wetland</p> <p>▭ 150-foot Buffer</p>	<p><b>Cowardin Classification</b></p> <p>▭ PEM</p> <p><b>Hydroperiod</b></p> <p>▭ Seasonally Inundated</p>	<p><b>TETRA TECH</b></p> <p><b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b></p> <p>Carriger Solar, LLC Project Klickitat County, WA</p>
<p>0 100 200 Feet</p> <p>N</p>		

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-109 Date of site visit: 4/15/24  
 Rated by Summer Roberts, Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY III** (based on functions \_\_\_ or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	



## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet <span style="float: right;">points = 8</span> Wetland has an intermittently flowing outlet <span style="float: right;">points = 4</span> Wetland has a highly constricted permanently flowing outlet <span style="float: right;">points = 4</span> Wetland has a permanently flowing unconfined surface outlet <span style="float: right;">points = 0</span> (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	8	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 8</span> Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 6</span> The wetland is a headwater wetland <span style="float: right;">points = 4</span> Seasonal ponding: 1 ft - < 2 ft <span style="float: right;">points = 4</span> Seasonal ponding: 6 in - < 1 ft <span style="float: right;">points = 2</span> Seasonal ponding: < 6 in or wetland has only saturated soils <span style="float: right;">points = 0</span>	0	
Total for D 4	Add the points in the boxes above	



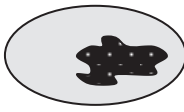
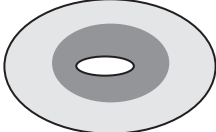
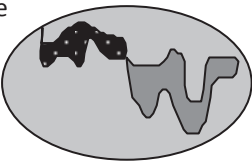

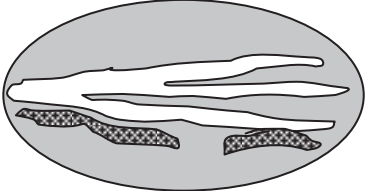
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? <span style="float: right;">Yes = 1 No = 0</span>	1	
Total for D 5	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>	0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? <span style="float: right;">Yes = 2 No = 0</span>	0	
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have &gt; 30% cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with &gt;30% cover</p> <p><input type="checkbox"/> Emergent plants &gt; 40 in (&gt; 100 cm) high are the highest layer with &gt;30% cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have &gt;30% cover) 4 or more checks: points = 3</p> <p><input type="checkbox"/> Forested (areas where trees have &gt;30% cover) 3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right; color: yellow;"><b>1 check: points = 0</b></p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> Yes = 3 No = 0</p>		
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: &gt; 9 species: points = 2          4-9 species: points = 1  <span style="background-color: yellow;"><b>&lt; 4 species: points = 0</b></span></p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p style="margin-top: 20px;">All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right; margin-top: 10px;">Riparian braided channels with 2 classes</p>		Figure__ 0

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

*Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.*

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>



<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

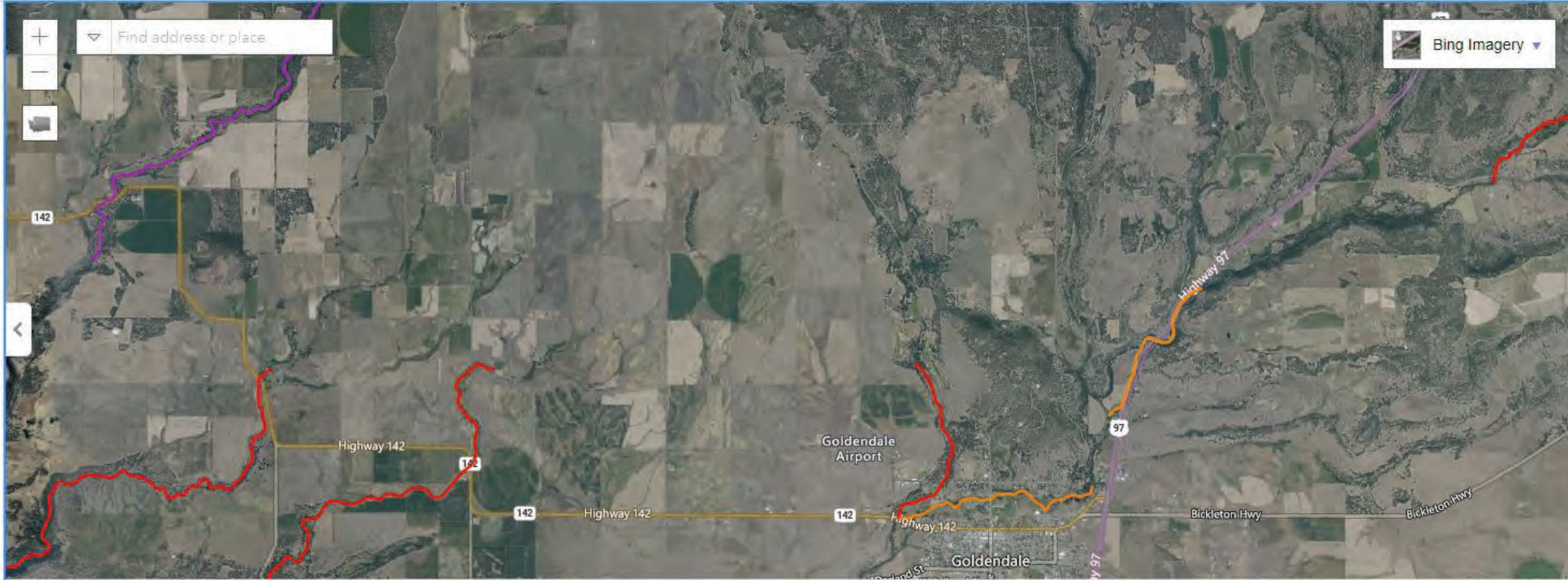
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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Powered by Esri

## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



Stream	<b>Cowardin Classification</b>
Wetland	PEM
150-foot Buffer	<b>Hydroperiod</b>
	Seasonally Inundated

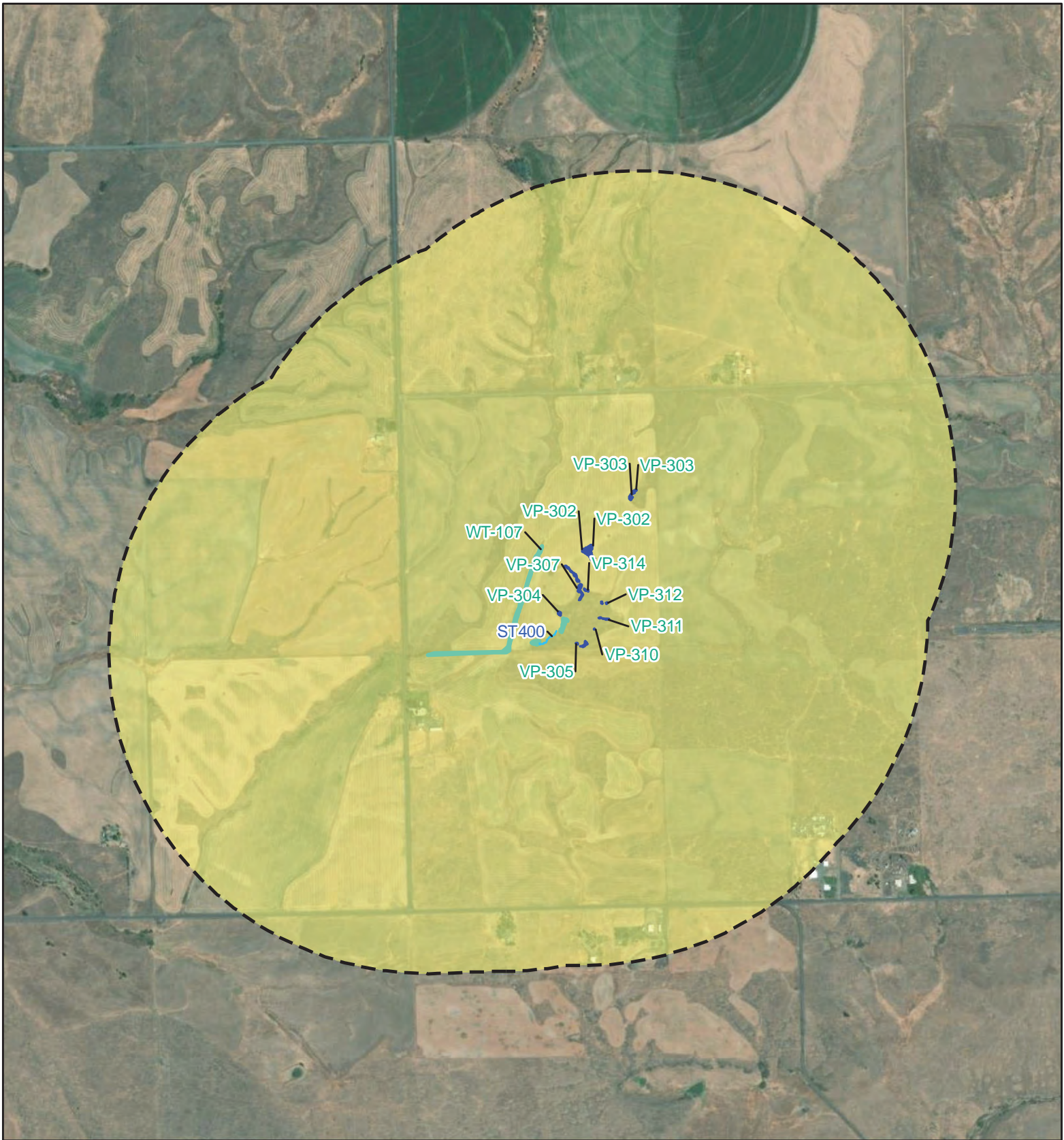
N






0 100 200 Feet

**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

---

Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

Wetland name or number \_\_\_\_\_

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-110 Date of site visit: 04/25/2024  
 Rated by Jess Taylor and Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY IV** (based on functions \_\_\_\_\_ or special characteristics \_\_\_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H M <b>L</b>	H <b>M</b> L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>14</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

Wetland name or number \_\_\_WT-110\_\_\_\_\_

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		1
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	7

**Rating of Site Potential** If score is: \_\_\_ 12- 16 = H \_\_\_ 6- 11 = M \_\_\_ 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: \_\_\_ 3 or 4 = H \_\_\_ 1 or 2 = M \_\_\_ 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: \_\_\_ 2-4 = H \_\_\_ 1 = M \_\_\_ 0 = L

Record the rating on the first page

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 8
  - Wetland has an intermittently flowing outlet points = 4
  - Wetland has a highly constricted permanently flowing outlet points = 4
  - Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

8

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

Yes = 1 No = 0

0

Total for D 5

Add the points in the boxes above

0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland points = 0

0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0


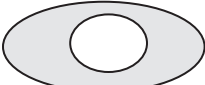

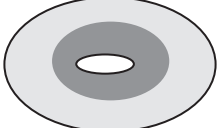
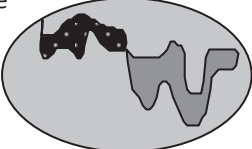

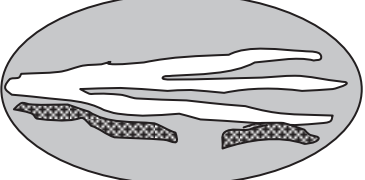
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (&gt; 100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;"><b>2 checks: points = 1</b></p> <p style="text-align: right;">1 check: points = 0</p>		1
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 <b>No = 0</b></span></p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>4</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;"><b>4-9 species: points = 1</b></p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>		1
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 1

Wetland name or number WT-110

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	<p>Add the points in the boxes above 4</p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %            &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>            20-33% of 1km Polygon <span style="float: right;">points = 2</span>            10-19% of 1km Polygon <span style="float: right;">points = 1</span>            &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %            Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>            Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>            Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>            Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:            &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>            Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 No = 0</p>	0
<p>Total for H 2</p>	<p>Add the points in the boxes above 3</p>

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan            Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>            Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b> Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

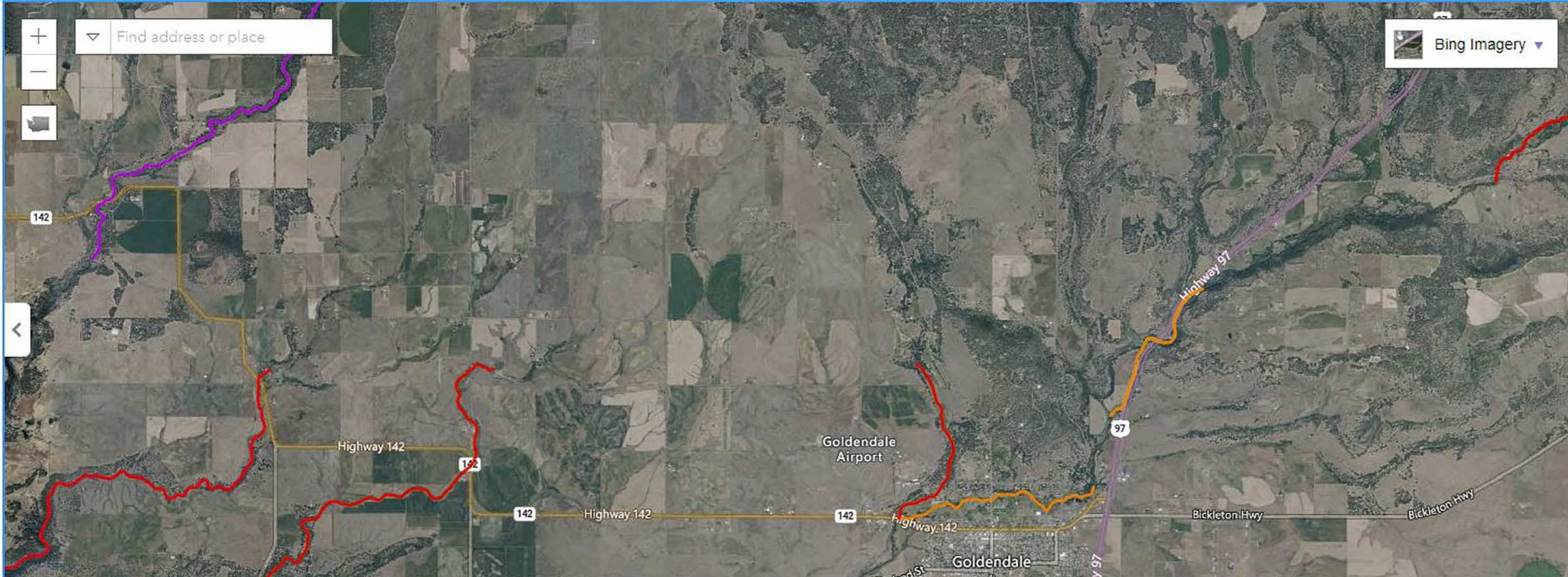
☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
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	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

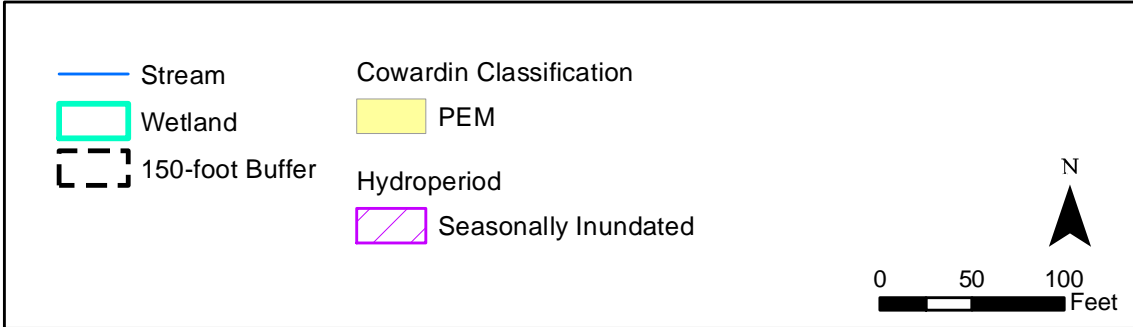
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

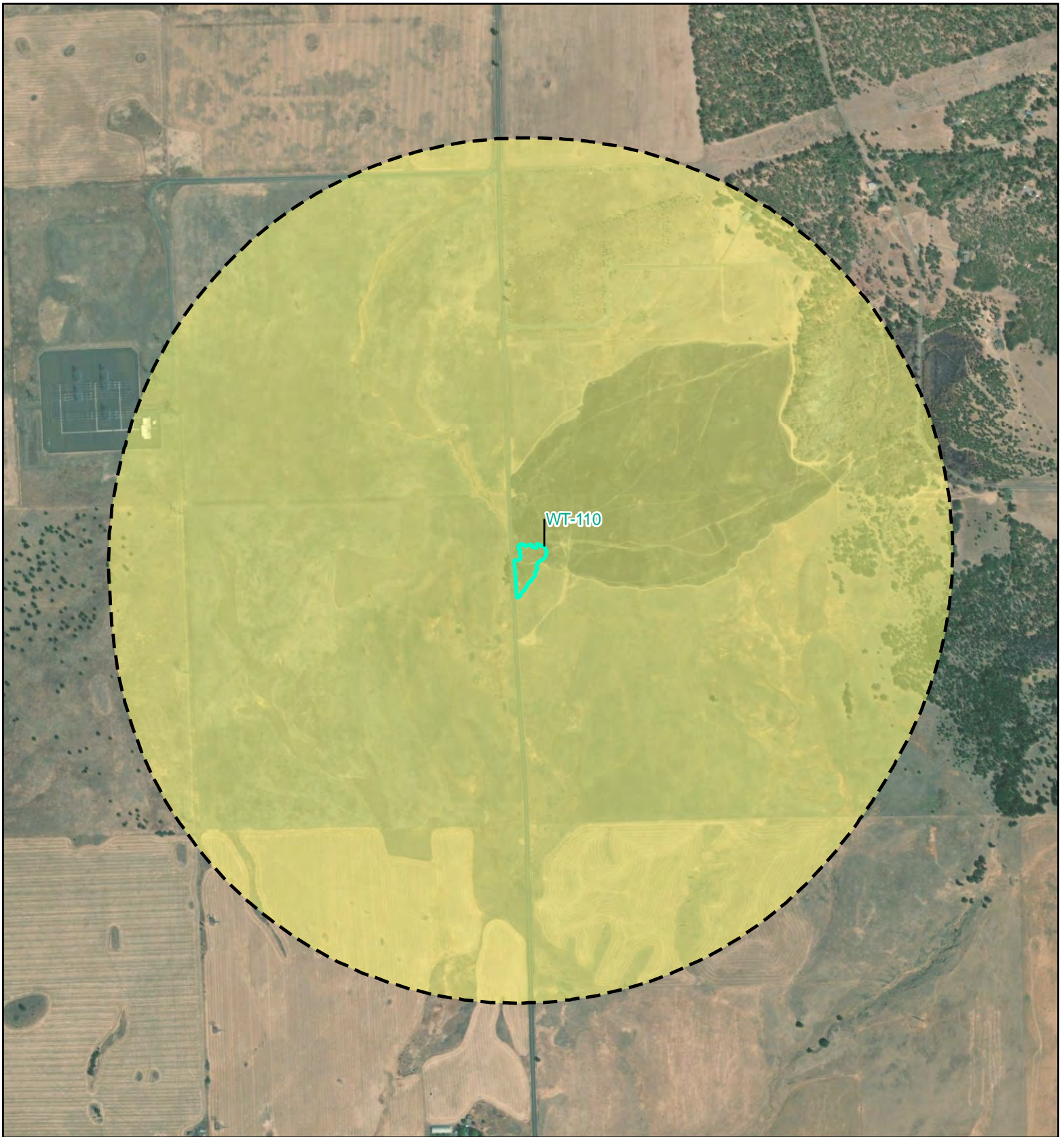
To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



**TETRA TECH**

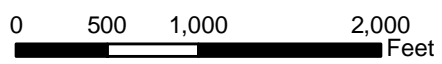
**WT-110**  
**Cowardin Classification**  
**and Hydroperiod**

Carriger Solar, LLC Project  
 Klickitat County, WA



- Wetland
- 1-km Buffer
- Land Use Intensity
- Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**WT-110**

Carriger Solar, LLC Project  
Klickitat County, WA

Wetland name or number\_

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WT-111 Date of site visit : 04/26/2024  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY IV** (based on functions\_\_\_ or special characteristics\_\_\_)

## 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- X \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	
Score Based on Ratings	5			4			5			<b>TOTAL</b> 14

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

Wetland name or number \_\_\_WT-111\_\_\_\_\_

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
\_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
\_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
\_\_\_ The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
\_\_\_ The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.



Wetland name or number \_\_\_WT-111\_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		3
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		1
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	5

**Rating of Site Potential** If score is: **12- 16 = H** **6- 11 = M** **0- 5 = L**

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: **3 or 4 = H** **1 or 2 = M** **0 = L**

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: **2-4 = H** **1 = M** **0 = L**

Record the rating on the first page

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 8
  - Wetland has an intermittently flowing outlet points = 4
  - Wetland has a highly constricted permanently flowing outlet points = 4
  - Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

8

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

Yes = 1 No = 0

0

Total for D 5

Add the points in the boxes above

0

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland points = 0

0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0


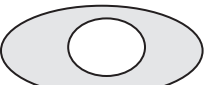

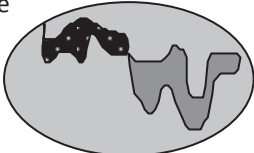
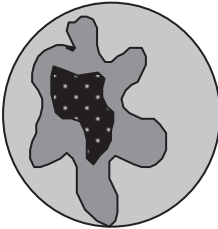
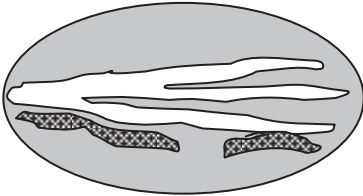
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)</p>	<p>4 or more checks: points = 3</p> <p>3 checks: points = 2</p> <p><b>2 checks: points = 1</b></p> <p>1 check: points = 0</p>	<b>1</b>
<p>H 1.2. Is one of the vegetation types Aquatic Bed?</p>		<p>Yes = 1 No = 0</p>
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b></p>		<p>Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>Yes = 3 <b>No = 0</b></p>
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.</i></p> <p><i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>4</u></p>		<p>Scoring: <math>&gt; 9</math> species: points = 2</p> <p><b>4-9 species: points = 1</b></p> <p><math>&lt; 4</math> species: points = 0</p>
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</p>		<p>Figure__</p> <p><b>1</b></p>
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 10px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p>		

Wetland name or number \_\_WT-111\_\_\_\_\_

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input checked="" type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	4

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %            &gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>            20-33% of 1km Polygon <span style="float: right;">points = 2</span>            10-19% of 1km Polygon <span style="float: right;">points = 1</span>            &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %            Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>            Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>            Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>            Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:            &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>            Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
<p>Total for H 2</p>	6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan            Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>            Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

<b>Wetland Type</b>	<b>Category</b>
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

☞ **Juniper Savannah:** All juniper woodlands.

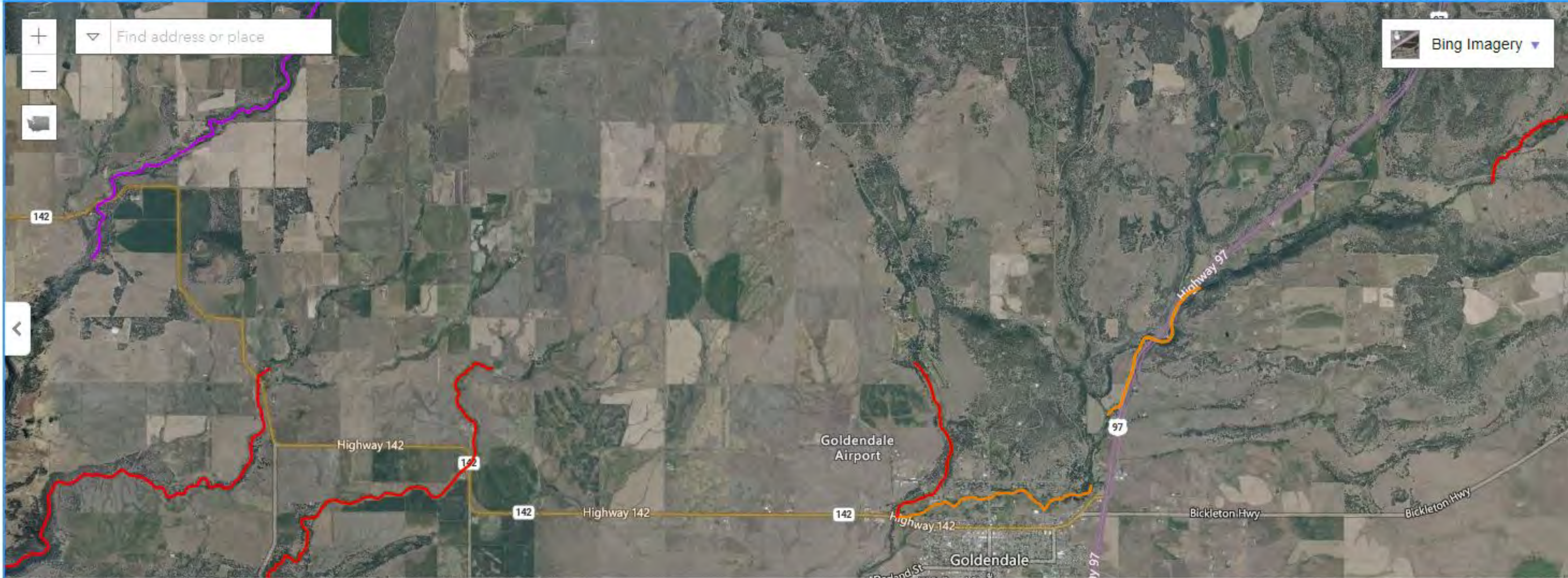
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>

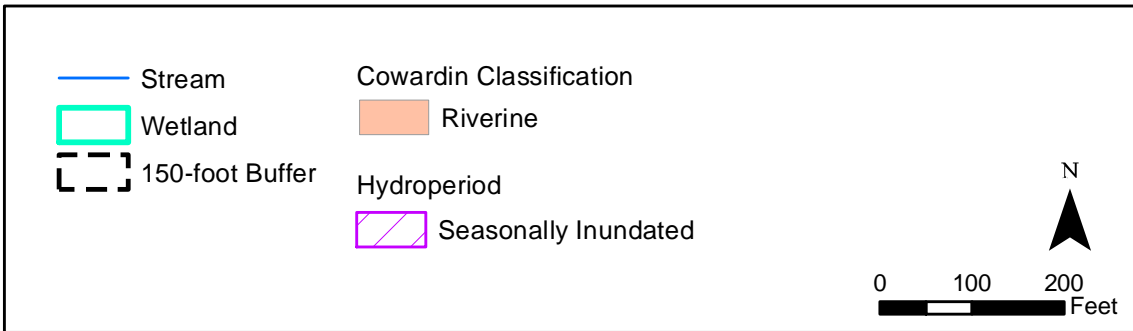
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)


## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

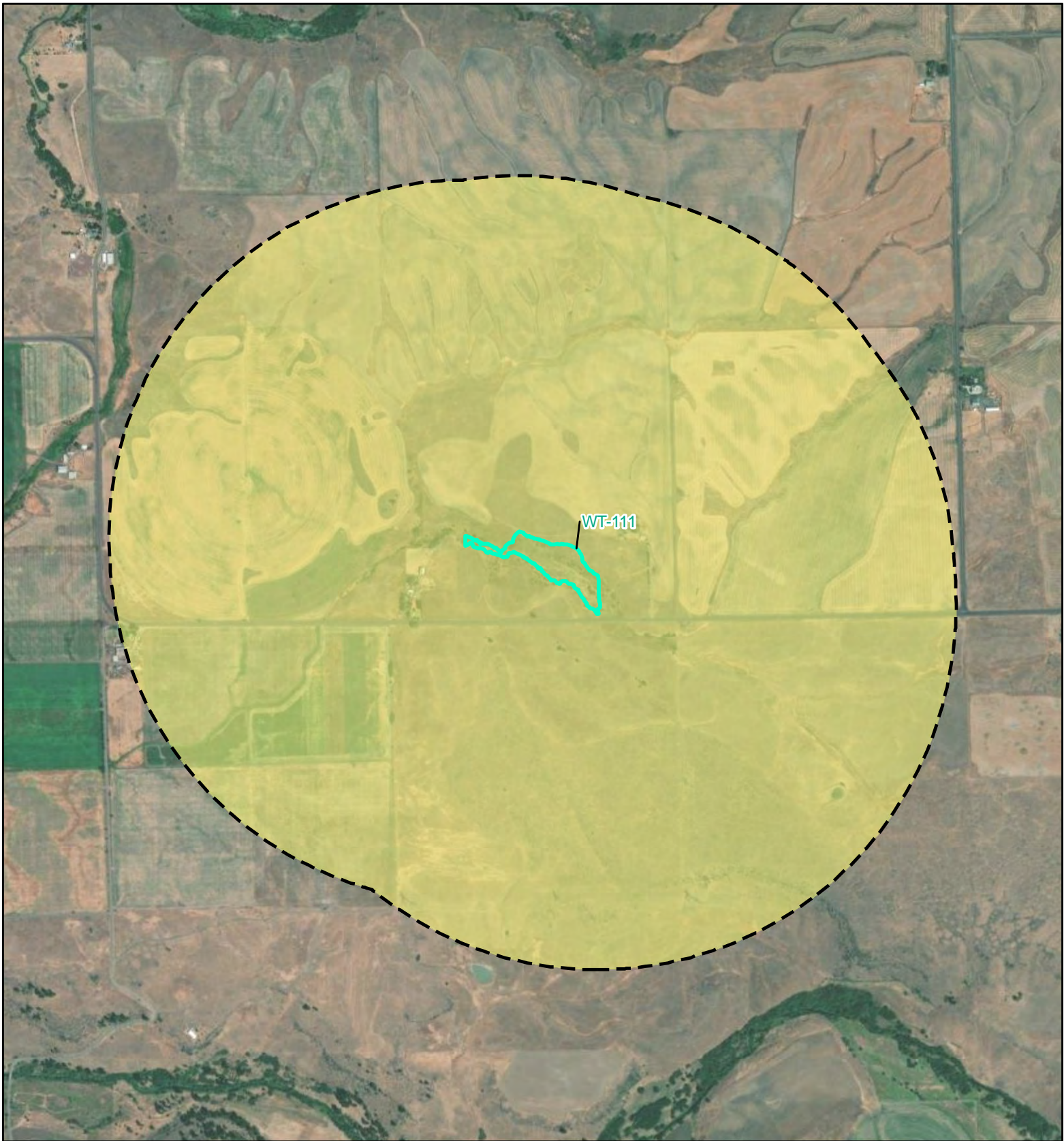
To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).






**WT-111**  
**Cowardin Classification**  
**and Hydroperiod**

Carriger Solar, LLC Project  
 Klickitat County, WA



 Wetland  
 1-km Buffer

Land Use Intensity  
 Moderate/Low

Land Use Intensity determined based on USGS  
 National Land Cover Database (NLCD) designations  
 and Table 3 from the Washington State Wetland  
 Rating System for Eastern Washington:  
 2014 Update (Effective January 2015).



0 500 1,000 2,000  
 Feet



**WT-111**

Carriger Solar, LLC Project  
 Klickitat County, WA

Wetland name or number \_\_\_\_\_

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-301 Date of site visit: 04/15/24

Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  X  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions \_\_\_\_\_ or special characteristics X)

## 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_ Category I – Total score = 22-27

\_\_\_\_\_ Category II – Total score = 19-21

X Category III – Total score = 16-18

\_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
Score Based on Ratings	6	5	5	16

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools	<b>II</b> <b>III</b>
Alkali	<b>I</b>
Wetland of High Conservation Value	<b>I</b>
Bog and Calcareous Fens	<b>I</b>
Old Growth or Mature Forest – slow growing	<b>I</b>
Aspen Forest	<b>I</b>
Old Growth or Mature Forest – fast growing	<b>II</b>
Floodplain forest	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number\_VP-301\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*



**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: \_\_\_ 12- 16 = H X 6- 11 = M \_\_\_ 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: \_\_\_ 3 or 4 = H \_\_\_ 1 or 2 = M X 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: X 2-4 = H \_\_\_ 1 = M X 0 = L

Record the rating on the first page

**DEPRESSIONAL WETLANDS**Points  
(only 1 score  
per box)**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

8

Wetland has no surface water outlet

points = 8

Wetland has an intermittently flowing outlet

points = 4

Wetland has a highly constricted permanently flowing outlet

points = 4

Wetland has a permanently flowing unconfined surface outlet

points = 0

*(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

0

Seasonal ponding: &gt; 3 ft above the lowest point in wetland or the surface of permanent ponding

points = 8

Seasonal ponding: 2 ft - &lt; 3 ft above the lowest point in wetland or the surface of permanent ponding

points = 6

The wetland is a headwater wetland

points = 4

Seasonal ponding: 1 ft - &lt; 2 ft

points = 4

Seasonal ponding: 6 in - &lt; 1 ft

points = 2

Seasonal ponding: &lt; 6 in or wetland has only saturated soils

points = 0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 5.2. Is &gt; 10% of the area within 150 ft of the wetland in a land use that generates runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

1

**Rating of Landscape Potential** If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

0

Choose the description that best matches conditions around the wetland being rated. *Do not add points.**Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why \_\_\_\_\_

points = 0

There are no problems with flooding downstream of the wetland

points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0


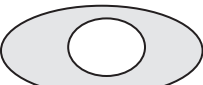

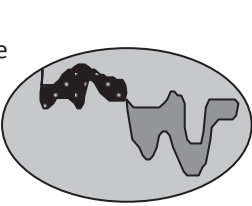
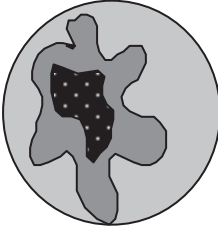
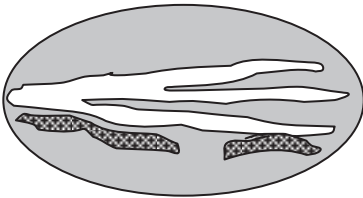
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt;12-40</math> in (<math>&gt;30-100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>	0	
<b>H 1.2.</b> Is one of the vegetation types Aquatic Bed?	Yes = 1 <b>No = 0</b>	
<b>H 1.3. Surface water</b>		
<p><b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p><b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3 <b>No = 0</b></p>		0
<b>H 1.4. Richness of plant species</b>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2  <math>4-9</math> species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>		0
<b>H 1.5. Interspersion of habitats</b>		
<p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p>		Figure__ 0
 <p><b>None = 0 points</b></p>	 <p><b>Low = 1 point</b></p>	 <p><b>Moderate = 2 points</b></p>
<p>All three diagrams in this row are <b>High = 3 points</b></p>		   <p style="text-align: center;">Riparian braided channels with 2 classes</p>

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	<p>Add the points in the boxes above 1</p>

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <u>&gt; 1/3 (33.3%) of 1 km Polygon</u> <span style="float: right;">points = 3</span>                      20-33% of 1km Polygon <span style="float: right;">points = 2</span>                      10-19% of 1km Polygon <span style="float: right;">points = 1</span>                      &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %                      Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>                      Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>                      Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <u>Undisturbed habitat &lt; 10% of Polygon</u> <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                      &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <u>Does not meet criterion above</u> <span style="float: right;">points = 0</span></p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                      Yes = 3 No = 0</p>	0
<p>Total for H 2</p>	<p>Add the points in the boxes above 4</p>

**Rating of Landscape Potential** If score is: X 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                      Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                      Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <u>Site does not meet any of the criteria above</u> <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M X 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

<b>Wetland Type</b> <i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	<b>Category</b>
<p><b>SC 1.0. Vernal pools</b> Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li><input checked="" type="checkbox"/> Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li><input checked="" type="checkbox"/> The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li><input type="checkbox"/> Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	Yes
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = <b>Category II</b> No = <b>Category III</b></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li><input type="checkbox"/> The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li><input type="checkbox"/> If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Salt encrustations around more than 75% of the edge of the wetland</li> <li><input type="checkbox"/> More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li><input type="checkbox"/> A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<b>Cat. I</b>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</p> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)? Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)? Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>II</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

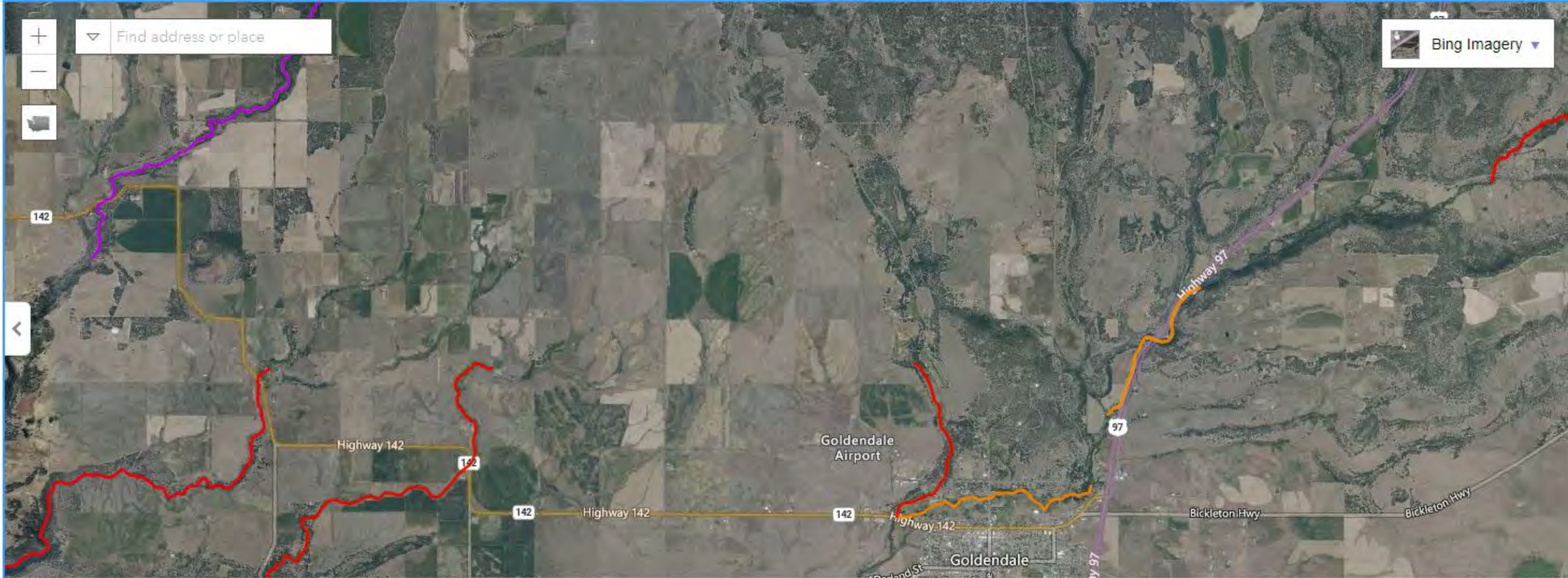
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



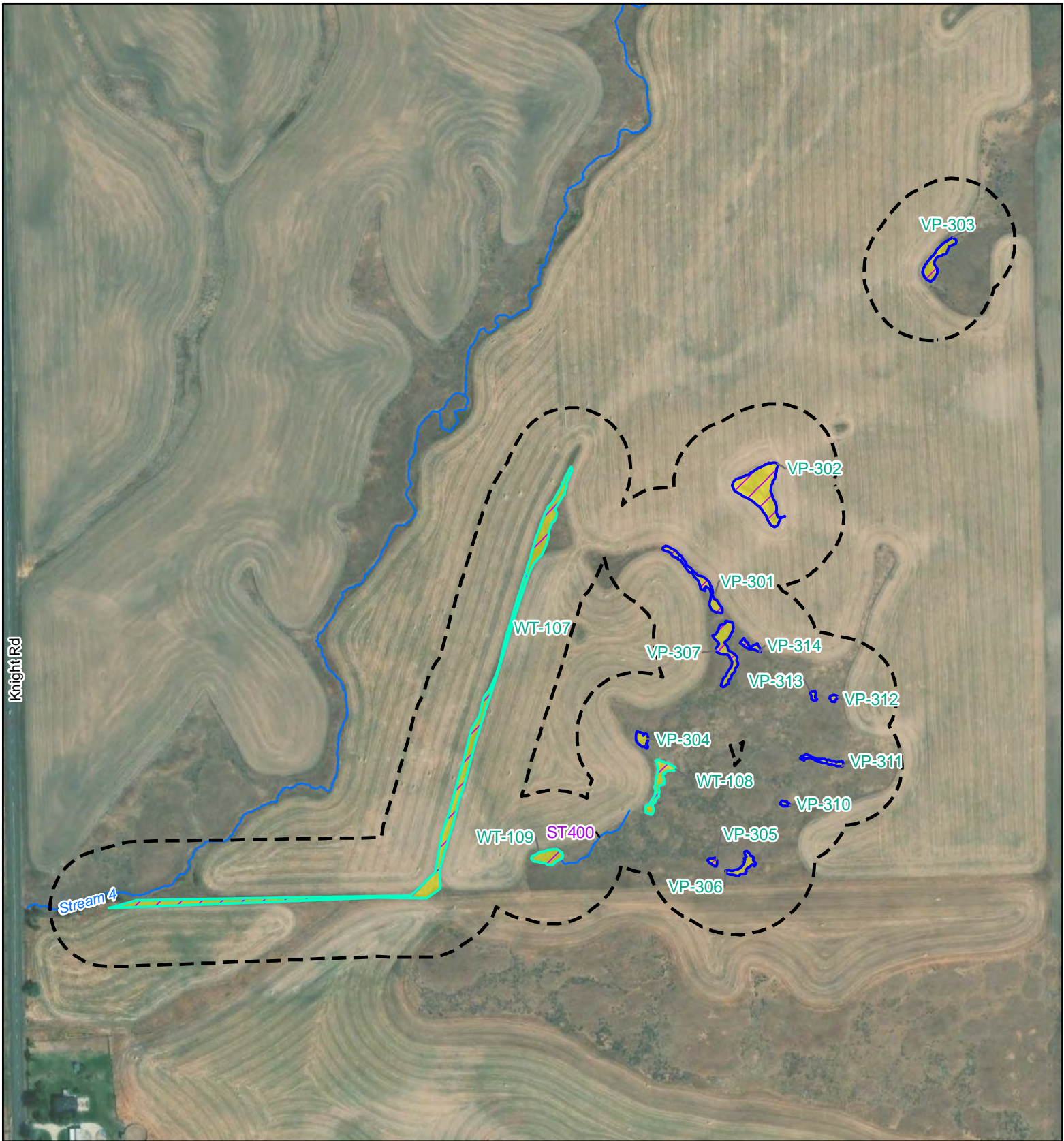
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)









## Water quality improvement projects

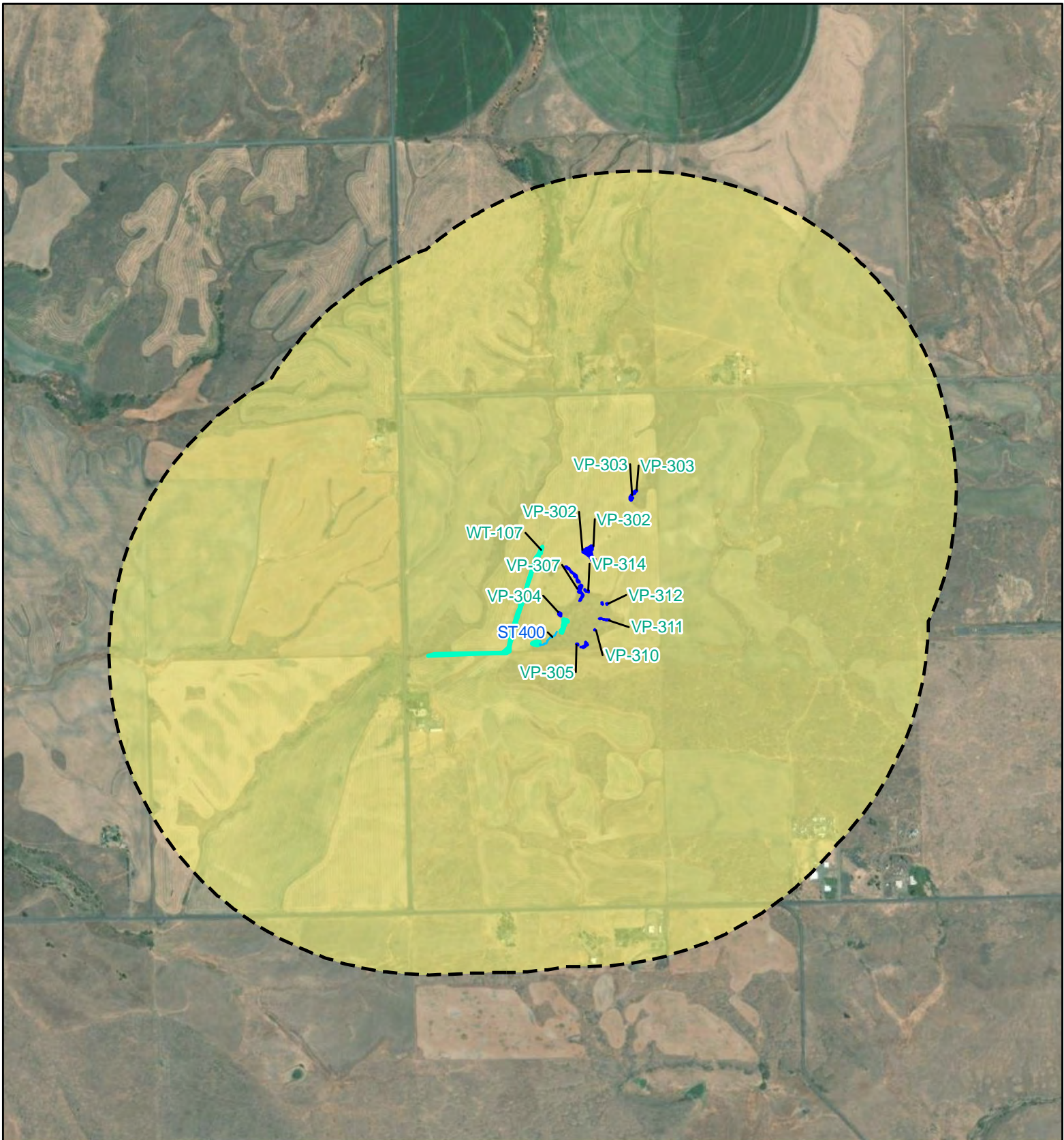
Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

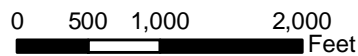


<ul style="list-style-type: none"> <li> Stream</li> <li> Wetland</li> <li> 150-foot Buffer</li> </ul>	<p><b>Cowardin Classification</b></p> <ul style="list-style-type: none"> <li> PEM</li> </ul> <p><b>Hydroperiod</b></p> <ul style="list-style-type: none"> <li> Seasonally Inundated</li> </ul>		<p>0 100 200 Feet</p> 	
<p><b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b></p>				
<p>Carriger Solar, LLC Project Klickitat County, WA</p>				



- Stream
- Wetland
- Vernal Pool
- 1-km Buffer
- Land Use Intensity
- Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-302 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

## OVERALL WETLAND CATEGORY III (based on functions \_\_\_ or special characteristics X)

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page



Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


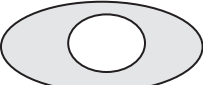

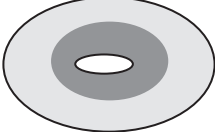
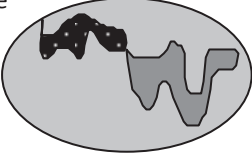
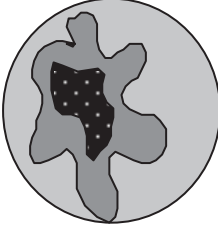
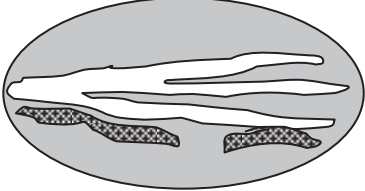
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.  Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 No = 0	0
H 1.3. <u>Surface water</u>		
<p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3 No = 0</p>		0
H 1.4. <u>Richness of plant species</u>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2            4-9 species: points = 1  <math>&lt; 4</math> species: points = 0</p>		0
H 1.5. <u>Interspersion of habitats</u>		
<p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>		Figure__ 0

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

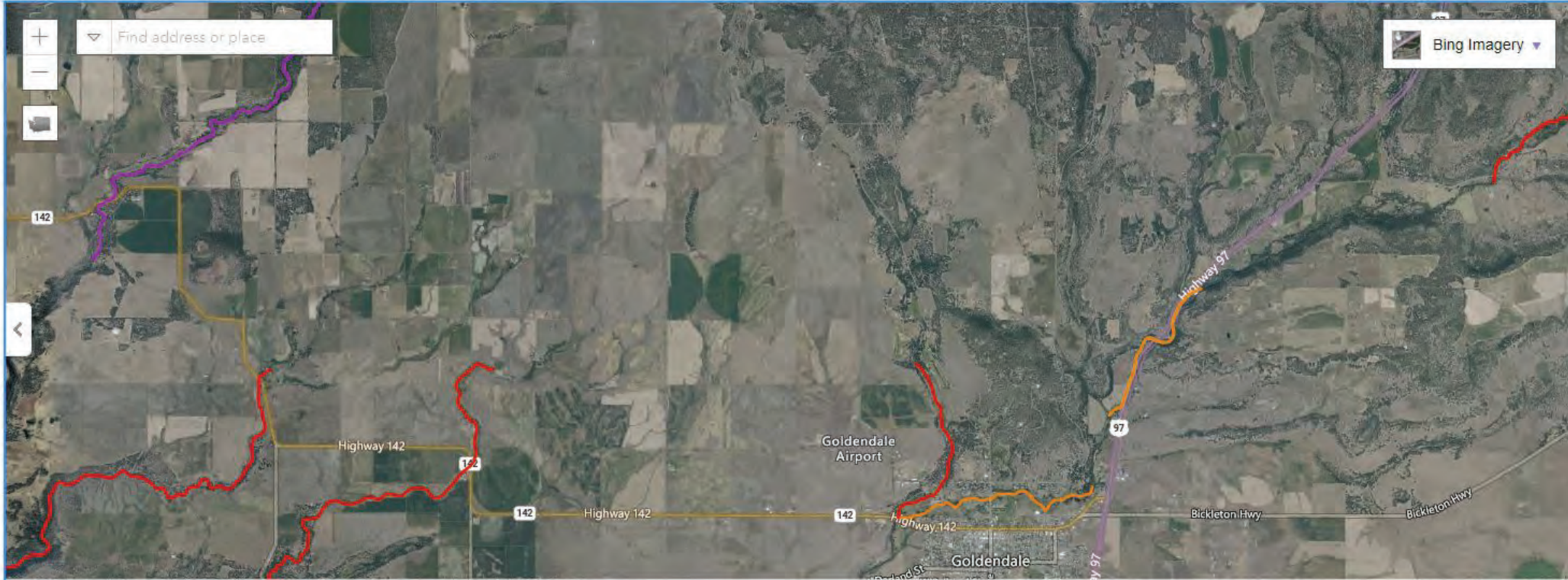
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects









Select the waterbody or pollutant name to find more information about the specific project.

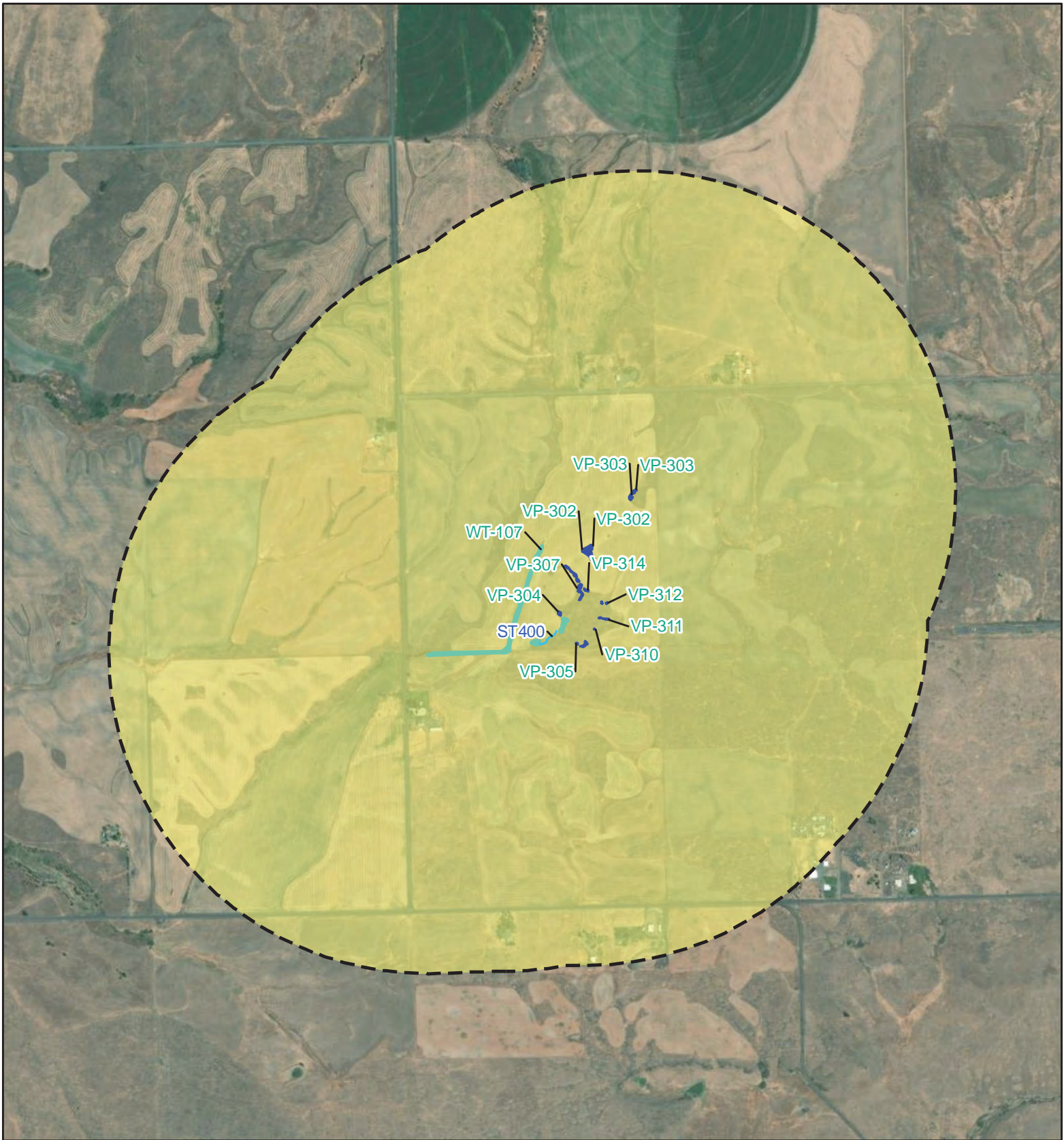
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).





 Stream  Wetland  150-foot Buffer	<b>Cowardin Classification</b>  PEM <b>Hydroperiod</b>  Seasonally Inundated	 <b>TETRA TECH</b> <b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b>
  0 100 200 Feet		<b>Carriger Solar, LLC Project Klickitat County, WA</b>



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



0 500 1,000 2,000  
Feet



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-303 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

## OVERALL WETLAND CATEGORY II (based on functions \_\_\_\_\_ or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	<b>M</b>	L	H	<b>M</b>	L	H	M	<b>L</b>	
Landscape Potential	H	M	<b>L</b>	H	<b>M</b>	L	<b>H</b>	M	L	
Value	<b>H</b>	M	L	H	M	<b>L</b>	H	M	<b>L</b>	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page


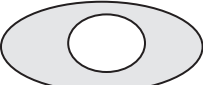

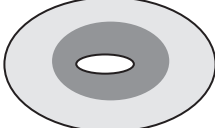
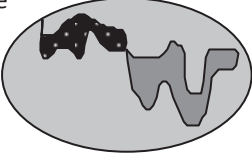

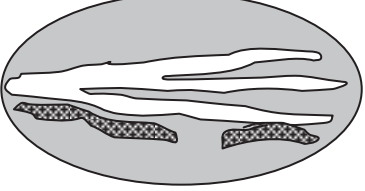
D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>		0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page



These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<b>H 1.1.</b> Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq 1/4</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants $> 40$ in ( $> 100$ cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $>30\%$ cover) <span style="float: right;">4 or more checks: points = 3</span> <input type="checkbox"/> Forested (areas where trees have $>30\%$ cover) <span style="float: right;">3 checks: points = 2</span> <span style="float: right;">2 checks: points = 1</span> <span style="float: right; color: yellow;">1 check: points = 0</span>		0
<b>H 1.2.</b> Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<b>H 1.3. Surface water</b> <b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least $1/4$ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span> <b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $1/4$ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span>		0
<b>H 1.4. Richness of plant species</b> Count the number of plant species in the wetland that cover at least $10 \text{ ft}^2$ . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2                      4-9 species: points = 1  <span style="color: yellow;"><math>&lt; 4</math> species: points = 0</span></span>		0
<b>H 1.5. Interspersion of habitats</b> Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>		Figure__ 0
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <div style="margin-top: 20px;"> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p> </div>		

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p>III</p> <p>Cat. II Cat. III</p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p>Cat. I</p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p>Cat. I</p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number VP-304

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-304 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I** – Total score = 22-27
- Category II** – Total score = 19-21
- Category III** – Total score = 16-18
- Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.



Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet <span style="float: right;">points = 8</span> Wetland has an intermittently flowing outlet <span style="float: right;">points = 4</span> Wetland has a highly constricted permanently flowing outlet <span style="float: right;">points = 4</span> Wetland has a permanently flowing unconfined surface outlet <span style="float: right;">points = 0</span> (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	8	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 8</span> Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding <span style="float: right;">points = 6</span> The wetland is a headwater wetland <span style="float: right;">points = 4</span> Seasonal ponding: 1 ft - < 2 ft <span style="float: right;">points = 4</span> Seasonal ponding: 6 in - < 1 ft <span style="float: right;">points = 2</span> Seasonal ponding: < 6 in or wetland has only saturated soils <span style="float: right;">points = 0</span>	0	
Total for D 4	Add the points in the boxes above	


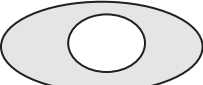

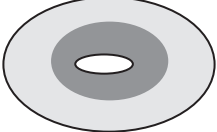
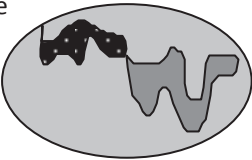

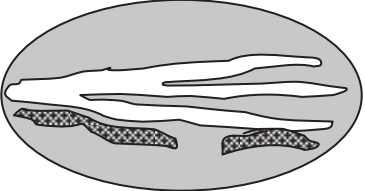
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? <span style="float: right;">Yes = 1 No = 0</span>	0	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? <span style="float: right;">Yes = 1 No = 0</span>	1	
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>	0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? <span style="float: right;">Yes = 2 No = 0</span>	0	
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>		0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. <u>Surface water</u>		
<p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3 No = 0</p>		0
H 1.4. <u>Richness of plant species</u>		
<p>Count the number of plant species in the wetland that cover at least <math>10 \text{ ft}^2</math>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2          4-9 species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>		0
H 1.5. <u>Interspersion of habitats</u>		
<p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 0

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

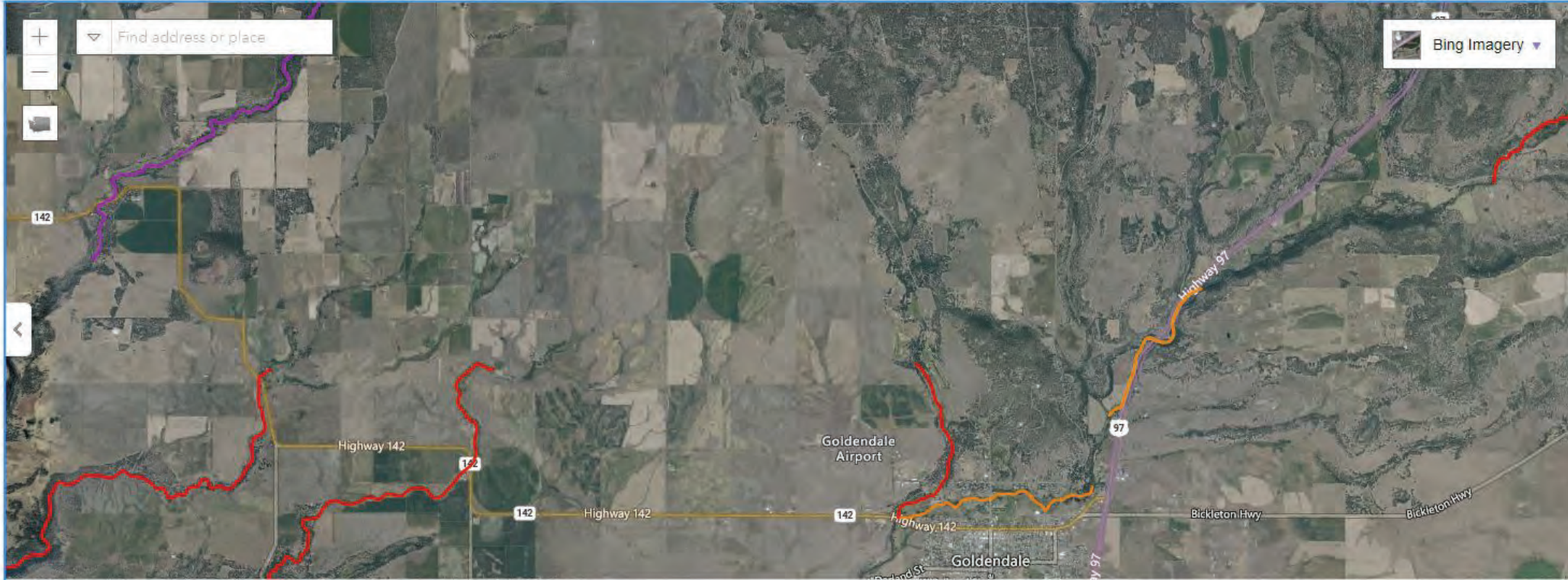
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



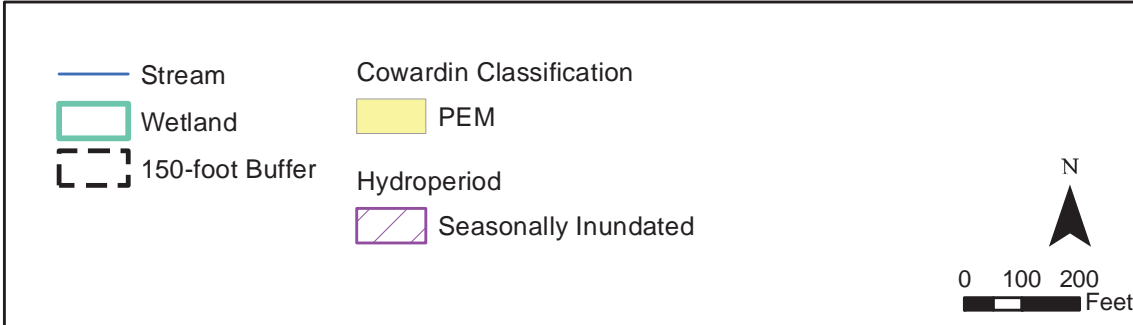
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

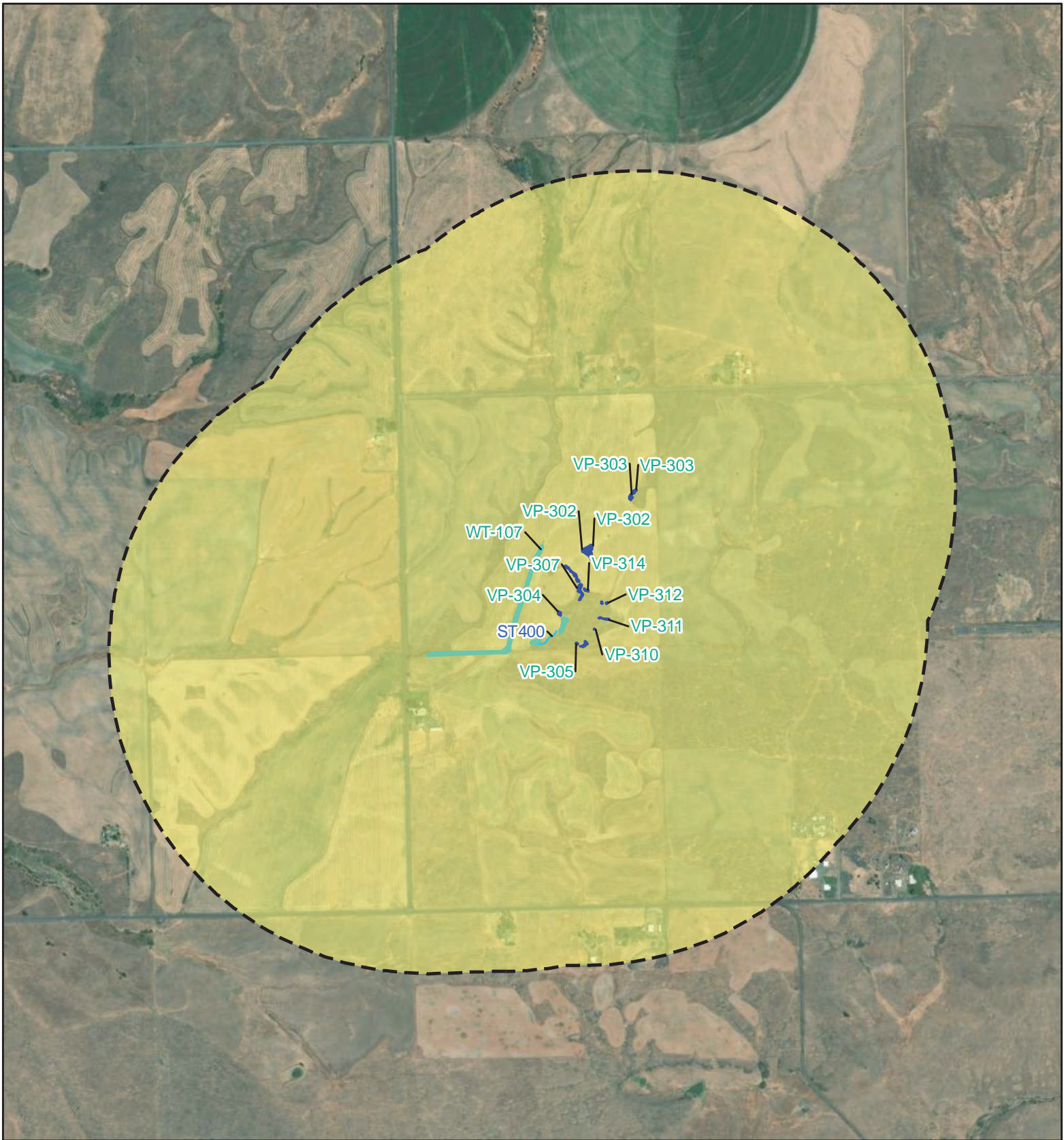
To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).








**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

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Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-305 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions \_\_\_ or special characteristics X)

## 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	<b>M</b>	L	H	<b>M</b>	L	H	M	<b>L</b>	
Landscape Potential	H	M	<b>L</b>	H	<b>M</b>	L	<b>H</b>	M	L	
Value	<b>H</b>	M	L	H	M	<b>L</b>	H	M	<b>L</b>	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
<i>Circle the appropriate category</i>		
Vernal Pools	<b>II</b>	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*



### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


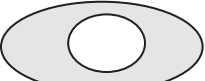

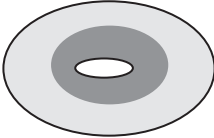
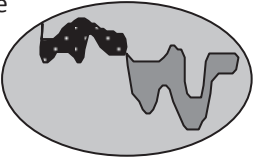

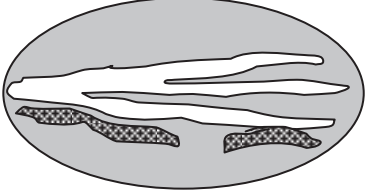
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>		0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input type="checkbox"/> Emergent plants >12-40 in ( $> 30$ -100 cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Emergent plants $> 40$ in ( $> 100$ cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) 4 or more checks: points = 3 <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover) 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	0	
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b> Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b> Yes = 3 No = 0		0
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i> # of species <u>3</u> Scoring: $> 9$ species: points = 2 4-9 species: points = 1 $< 4$ species: points = 0		0
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i>  <b>None = 0 points</b>  <b>Low = 1 point</b>  <b>Moderate = 2 points</b>   <b>High = 3 points</b>   <b>Riparian braided channels with 2 classes</b>	Figure__ 0	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-306 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions \_\_\_ or special characteristics X)

## 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	<b>M</b>	L	H	<b>M</b>	L	H	M	<b>L</b>	
Landscape Potential	H	M	<b>L</b>	H	<b>M</b>	L	<b>H</b>	M	L	
Value	<b>H</b>	M	L	H	M	<b>L</b>	H	M	<b>L</b>	
<b>Score Based on Ratings</b>	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above		



**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


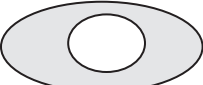

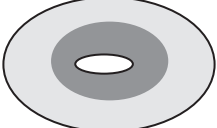
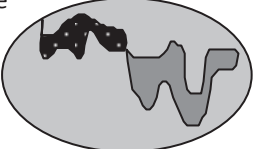

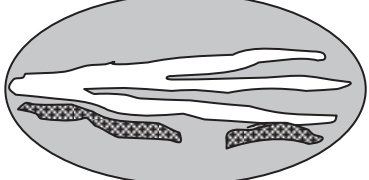
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		0
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.  Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 No = 0	0
H 1.3. <u>Surface water</u>		
<p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3 No = 0</p>		0
H 1.4. <u>Richness of plant species</u>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2          4-9 species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>		0
H 1.5. <u>Interspersion of habitats</u>		
<p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 0

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p>III</p> <p>Cat. II Cat. III</p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	<p>Cat. I</p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p>Cat. I</p>



<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

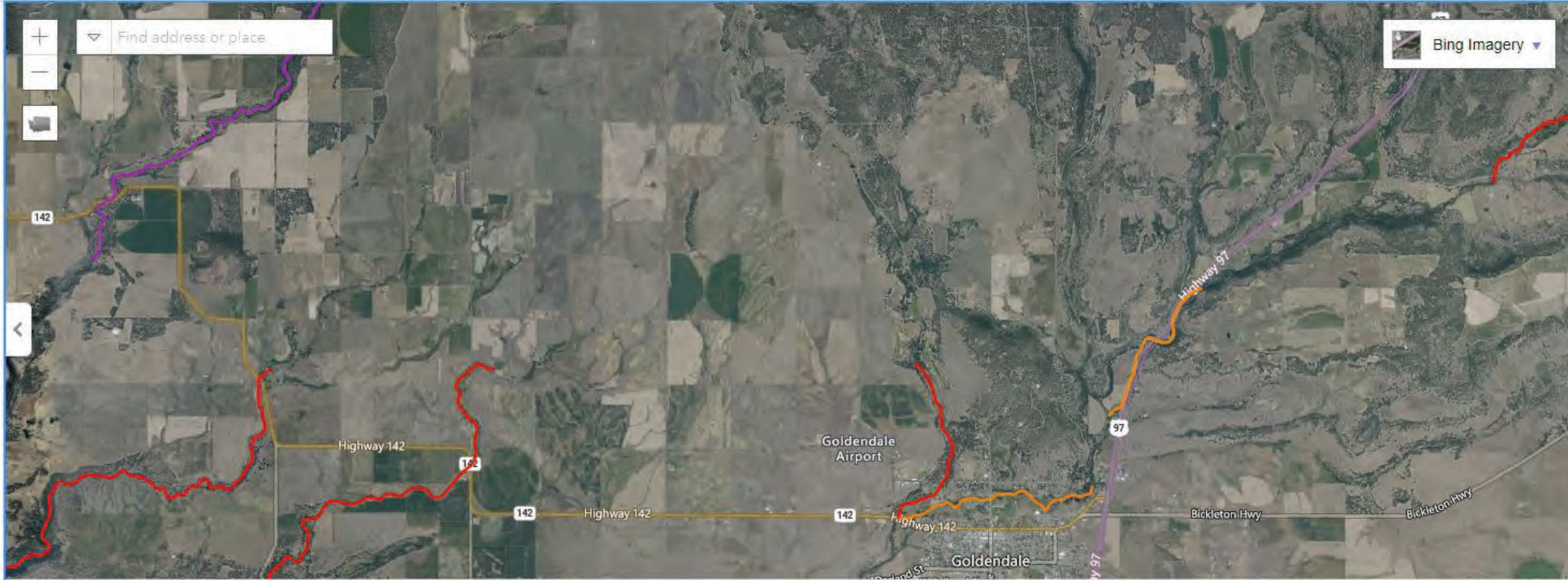
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

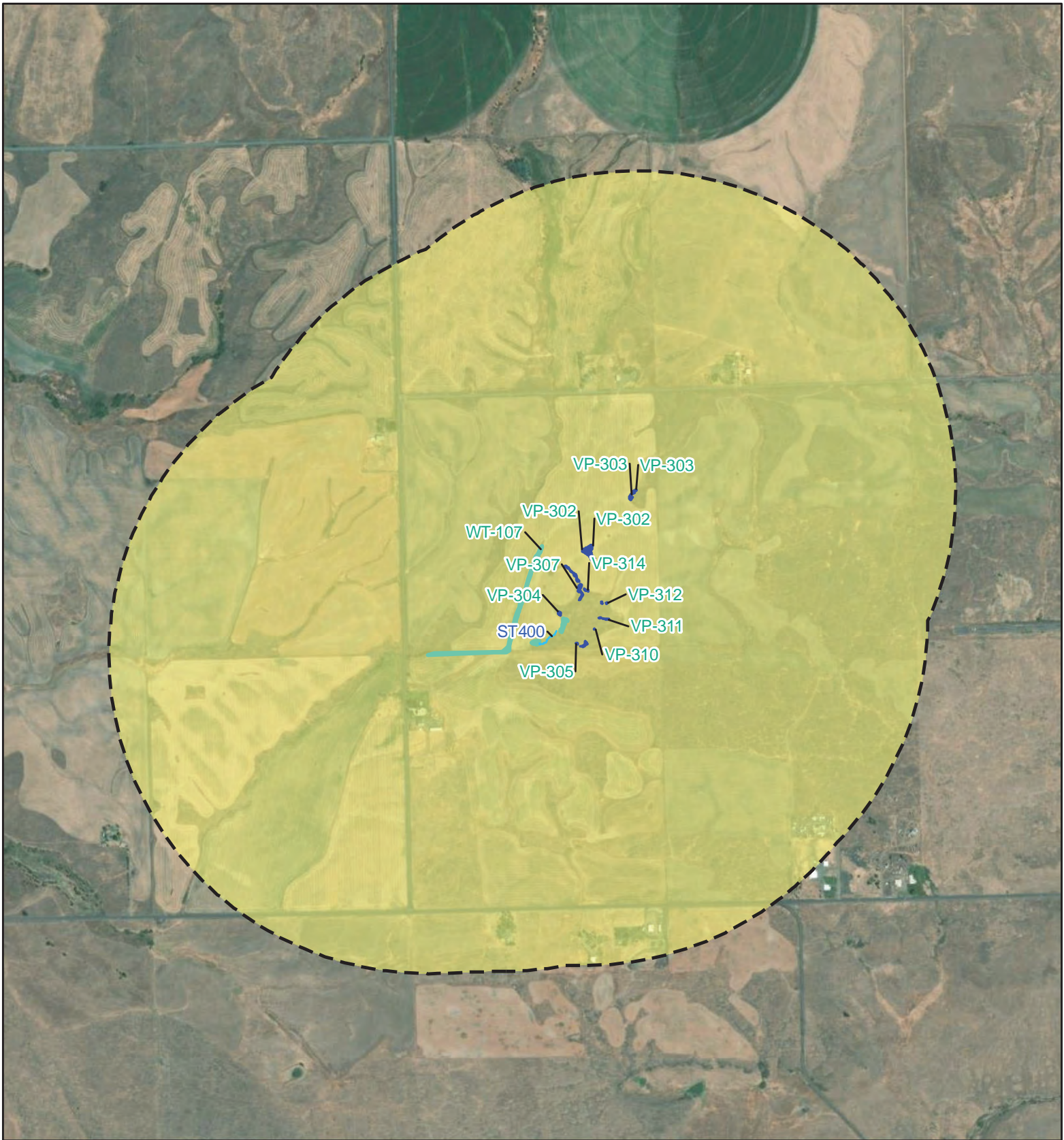
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



Stream Wetland 150-foot Buffer	<b>Cowardin Classification</b> PEM <b>Hydroperiod</b> Seasonally Inundated	TETRA TECH <b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b>  Carriger Solar, LLC Project Klickitat County, WA
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0 100 200 Feet



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-307 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY II** (based on functions  or special characteristics )

## 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	
<b>Score Based on Ratings</b>	<b>6</b>			<b>5</b>			<b>5</b>			<b>TOTAL</b> <b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems.		0
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page



<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	



# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

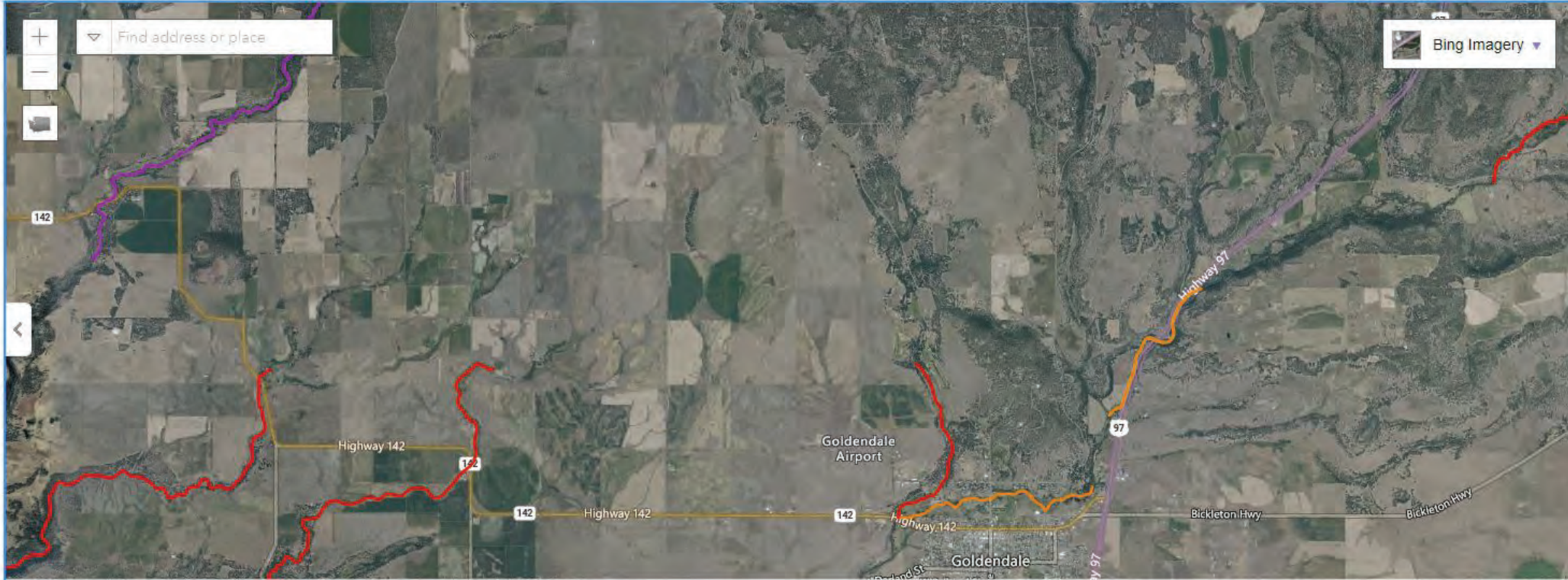
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



Stream	<b>Cowardin Classification</b>
Wetland	PEM
150-foot Buffer	<b>Hydroperiod</b>
	Seasonally Inundated

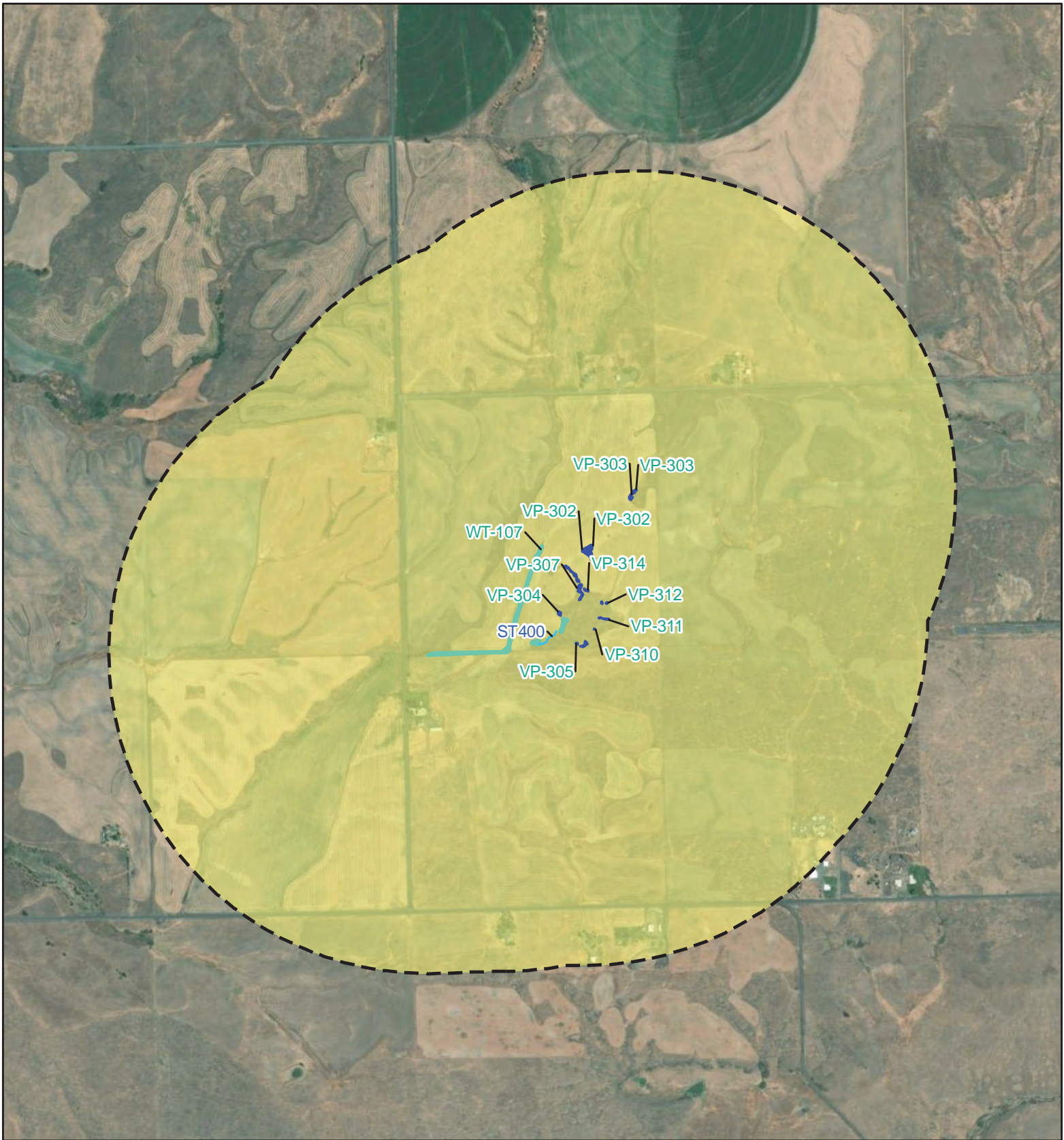
N






0 100 200 Feet

**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

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Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



0 500 1,000 2,000  
 Feet



**VP-301 through VP-314 and  
 WT-107 through WT-109**

Carriger Solar, LLC Project  
 Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-310 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

## 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	
<b>Score Based on Ratings</b>	<b>6</b>			<b>5</b>			<b>5</b>			<b>TOTAL</b> <b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.



Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


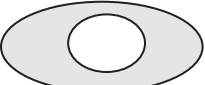

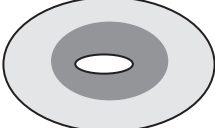
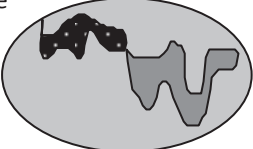

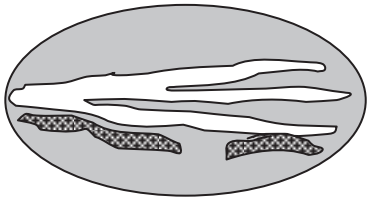
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems.		0
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (&gt; 100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>	0	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2          4-9 species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>	0	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	Figure__ 0	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

✂ **Juniper Savannah:** All juniper woodlands.

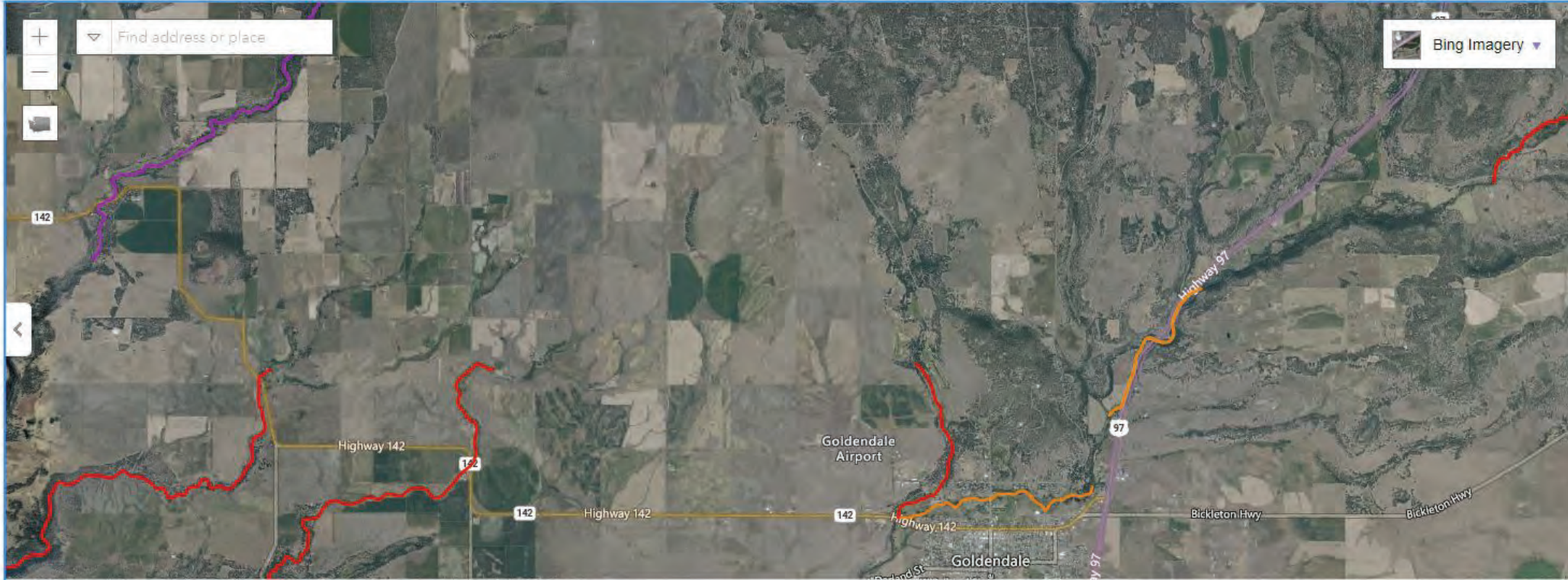
**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



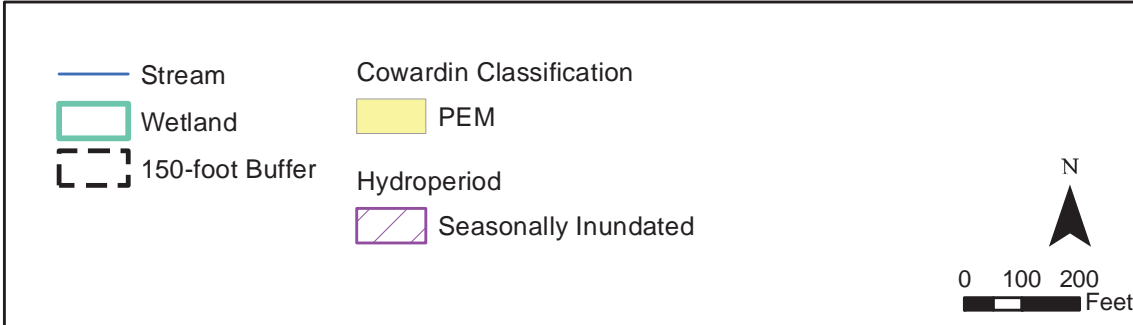
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

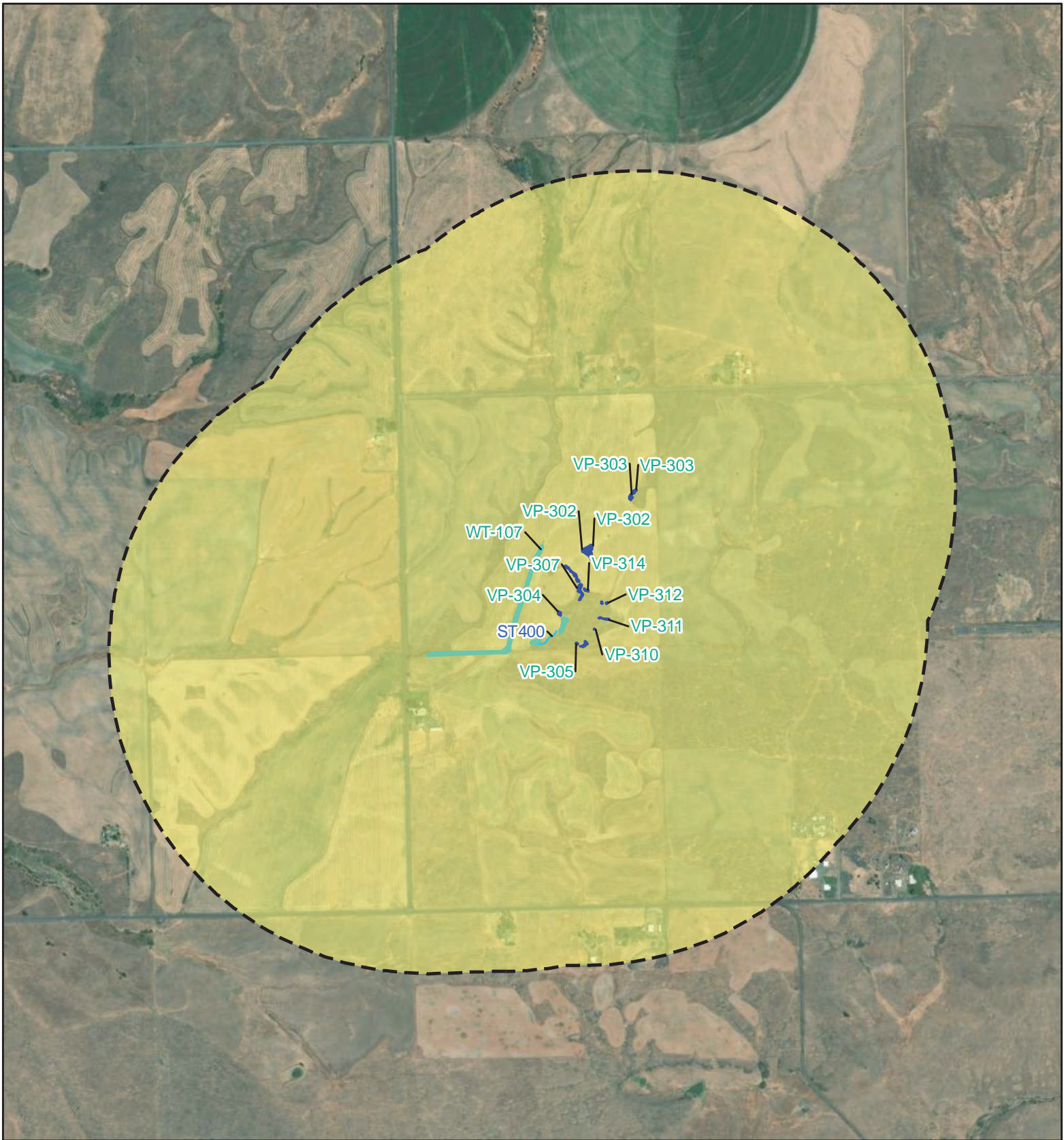
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-311 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY II** (based on functions  or special characteristics )

## 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*



**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2


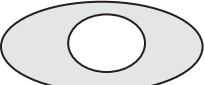

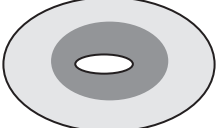
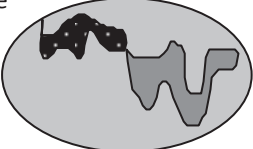

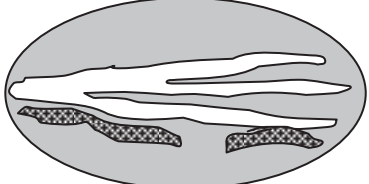
**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	
<b>Rating of Site Potential</b> If score is: <u>12-16 = H</u> <u>6-11 = M</u> <u>0-5 = L</u> <span style="float: right;">Record the rating on the first page</span>		

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	
<b>Rating of Landscape Potential</b> If score is: <u>3 = H</u> <u>1 or 2 = M</u> <u>0 = L</u> <span style="float: right;">Record the rating on the first page</span>		

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems.		0
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0
<b>Rating of Value</b> If score is: <u>2-4 = H</u> <u>1 = M</u> <u>0 = L</u> <span style="float: right;">Record the rating on the first page</span>		

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right; background-color: yellow;">1 check: points = 0</p>	0	
<p><b>H 1.2.</b> Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span></p>	0	
<p><b>H 1.3. Surface water</b></p> <p><b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p><b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>	0	
<p><b>H 1.4. Richness of plant species</b>            Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="float: right;">4-9 species: points = 1</p> <p style="float: right; background-color: yellow;"><math>&lt; 4</math> species: points = 0</p>	0	
<p><b>H 1.5. Interspersion of habitats</b>            Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.  <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p style="margin-top: 10px;">All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;">    </div> <p style="text-align: right; margin-top: 5px;">Riparian braided channels with 2 classes</p>	Figure__ 0	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

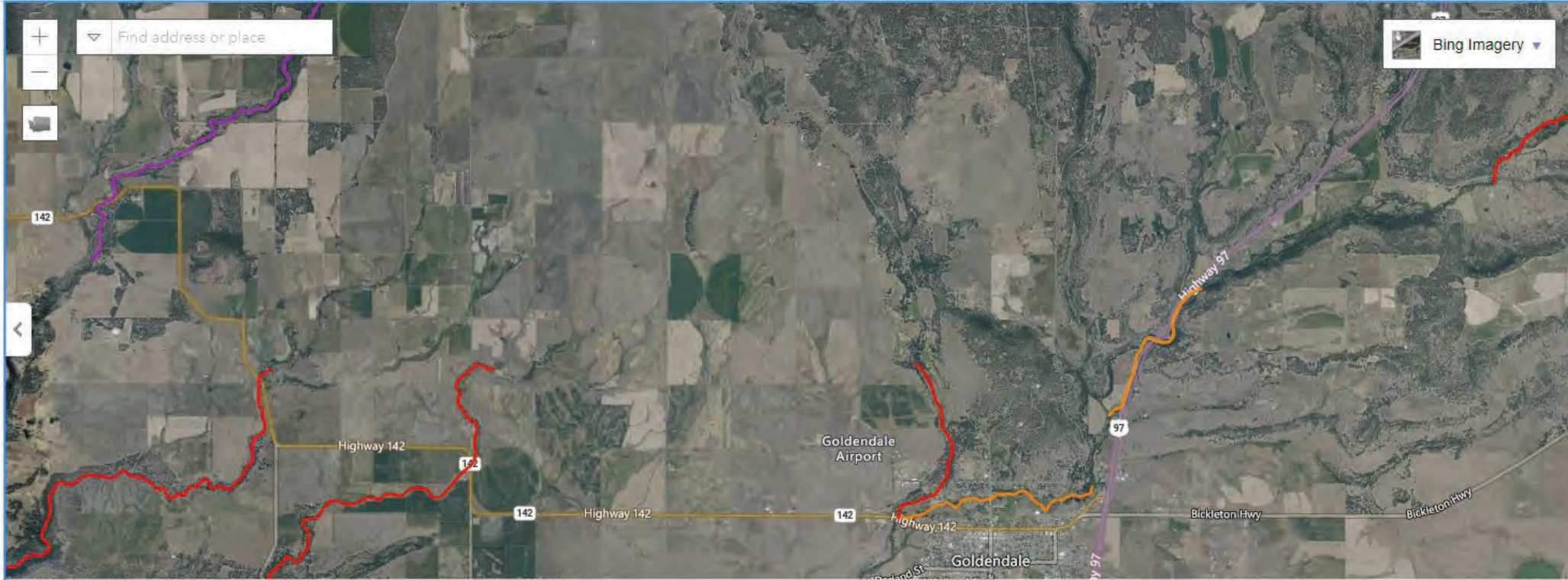
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>





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## Water quality improvement projects

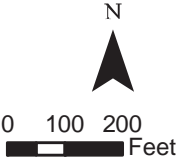
Select the waterbody or pollutant name to find more information about the specific project.

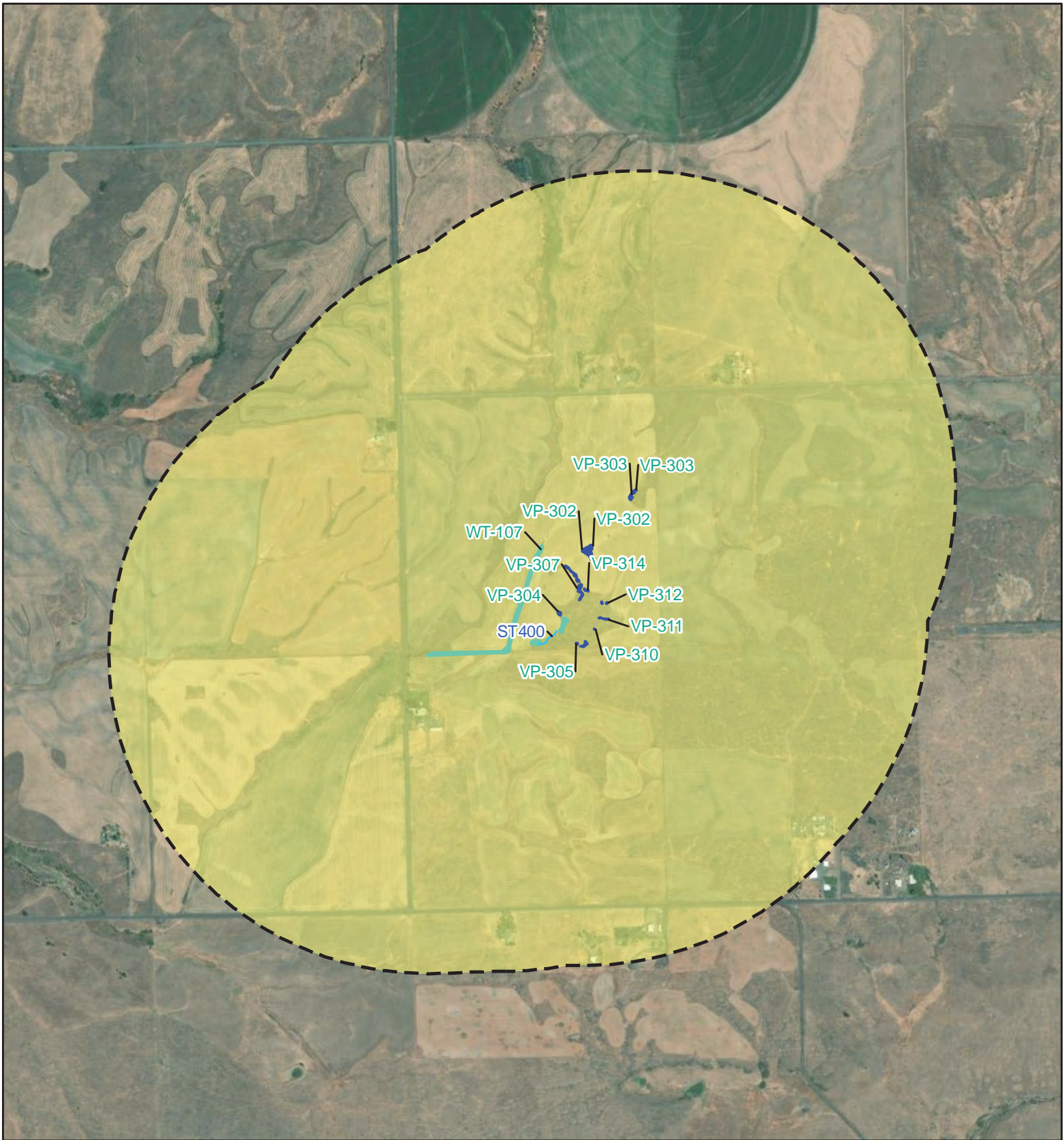
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



<p>— Stream</p> <p>▭ Wetland</p> <p>▭ 150-foot Buffer</p>	<p><b>Cowardin Classification</b></p> <p>▭ PEM</p> <p><b>Hydroperiod</b></p> <p>▭ Seasonally Inundated</p>	<p><b>Tt TETRA TECH</b></p> <p><b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b></p> <p>Carriger Solar, LLC Project Klickitat County, WA</p>
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-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

Wetland name or number VP-312

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-312 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY II** (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Landscape Potential	H M <b>L</b>	H <b>M</b> L	<b>H</b> M L	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number \_\_\_\_\_

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page



<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


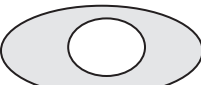

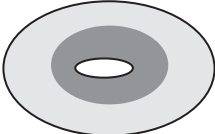
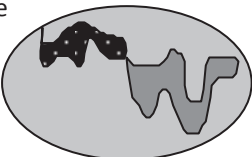

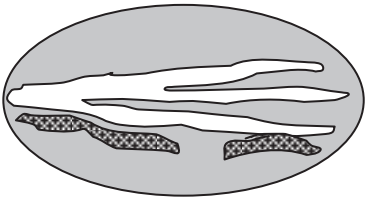
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>		0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is &gt;= ¼ ac or &gt;= 10% of the wetland if wetland is &lt; 2.5 ac.</i></p> <p>___ Aquatic bed                      x ___ Emergent plants 0-12 in (0-30 cm) high are the highest layer and have &gt; 30% cover                      ___ Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with &gt;30% cover                      ___ Emergent plants &gt; 40 in (&gt; 100 cm) high are the highest layer with &gt;30% cover                      ___ Scrub-shrub (areas where shrubs have &gt;30% cover) 4 or more checks: points = 3                      ___ Forested (areas where trees have &gt;30% cover) 3 checks: points = 2                      2 checks: points = 1                      1 check: points = 0</p>	0	
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>	0	
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> Yes = 3 No = 0</p>	0	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u></p> <p style="text-align: right;">Scoring: &gt; 9 species: points = 2                      4-9 species: points = 1                      &lt; 4 species: points = 0</p>	0	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	Figure__ 0	

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>                  20-33% of 1km Polygon <span style="float: right;">points = 2</span>                  10-19% of 1km Polygon <span style="float: right;">points = 1</span>                  &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %                  Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>                  Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>                  Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:                  &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>                  Yes = 3 No = 0</p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>                  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan                  Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream  <input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species  <input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i>                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

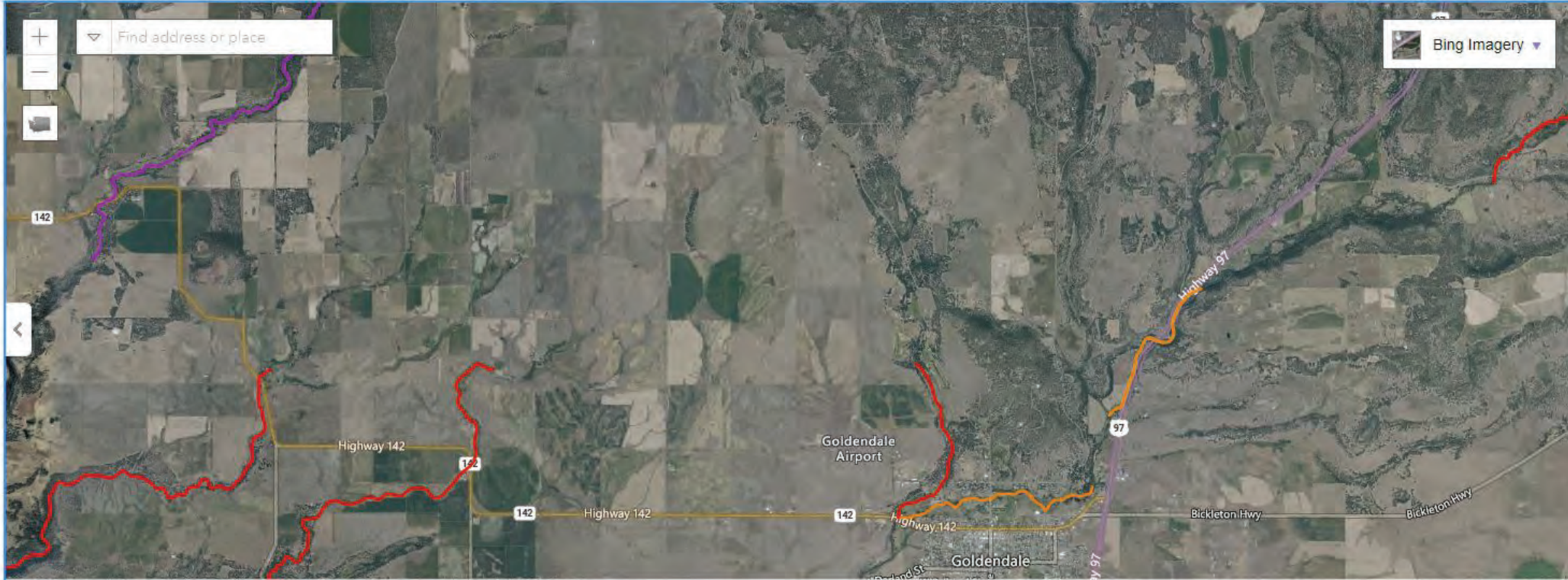
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

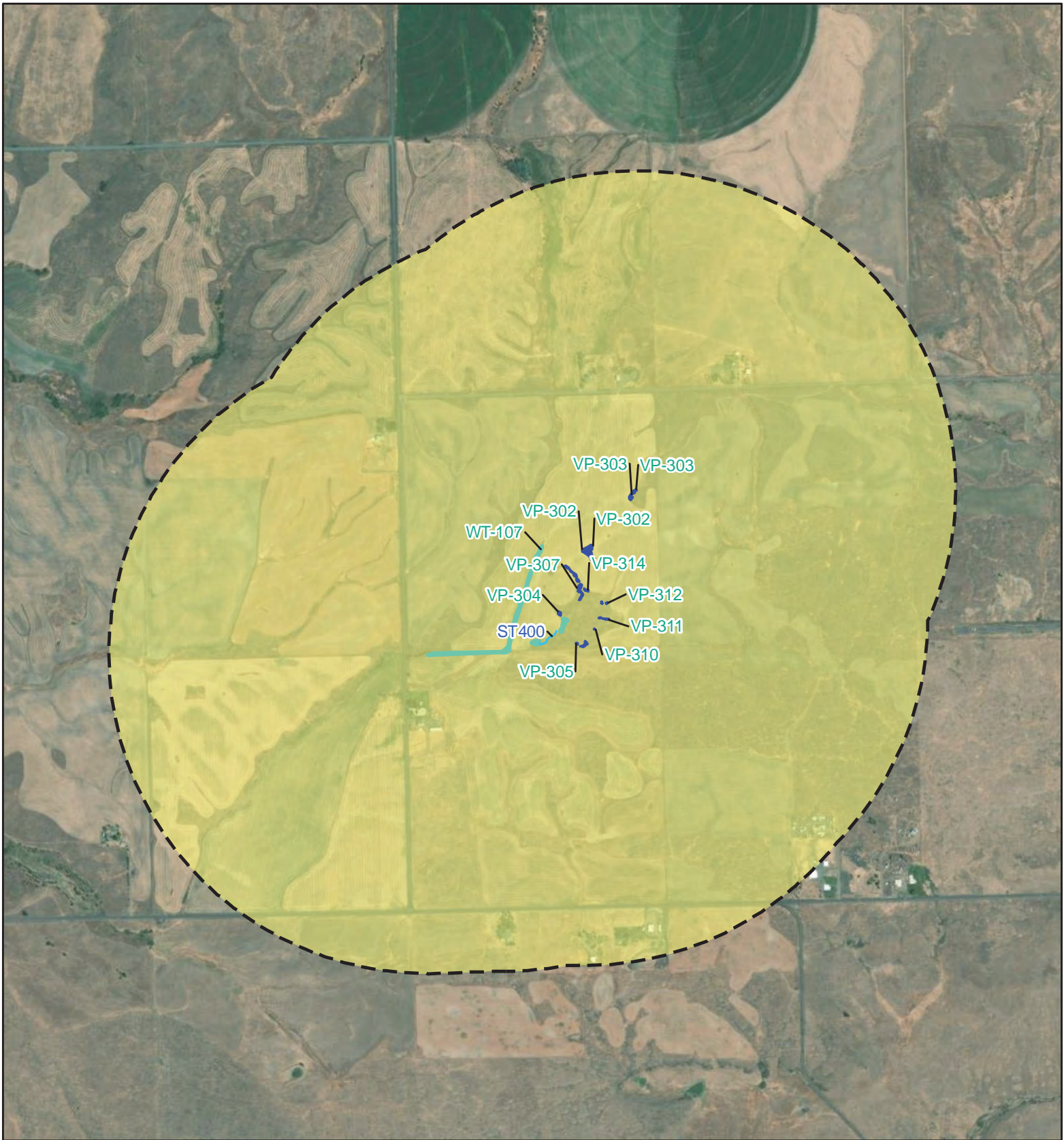
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).





<p>— Stream</p> <p>▭ Wetland</p> <p>▭ 150-foot Buffer</p>	<p>Cowardin Classification</p> <p>▭ PEM</p> <p>Hydroperiod</p> <p>▭ Seasonally Inundated</p>	<p><b>Tt TETRA TECH</b></p> <p><b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b></p> <p>Carriger Solar, LLC Project Klickitat County, WA</p>
<p>0 100 200 Feet</p> <p>N</p>		



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-313 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

## 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	<b>M</b>	L	H	<b>M</b>	L	H	M	<b>L</b>	
Landscape Potential	H	M	<b>L</b>	H	<b>M</b>	L	<b>H</b>	M	L	
Value	<b>H</b>	M	L	H	M	<b>L</b>	H	M	<b>L</b>	
<b>Score Based on Ratings</b>	<b>6</b>			<b>5</b>			<b>5</b>			<b>TOTAL</b> <b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is **Slope****

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is **Riverine****

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is **Depressional****

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )	YES = 3 NO = 0	0
D 1.3. <u>Characteristics of persistent vegetation</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		1
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND <ul style="list-style-type: none"> <li>Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2</li> <li>Surface flooding problems are in a sub-basin farther down-gradient points = 1</li> </ul> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0 There are no problems with flooding downstream of the wetland points = 0	0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page





H 1.6. <u>Special habitat features</u> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> % <input checked="" type="checkbox"/> $\geq \frac{1}{3}$ (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span> <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span> <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span> <input type="checkbox"/> <10% of 1km Polygon <span style="float: right;">points = 0</span>	3	
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ % <input type="checkbox"/> Undisturbed habitat > 50% of Polygon <span style="float: right;">points = 3</span> <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span> <input type="checkbox"/> Undisturbed habitat 10 - 50% and > 3 patches <span style="float: right;">points = 1</span> <input checked="" type="checkbox"/> Undisturbed habitat < 10% of Polygon <span style="float: right;">points = 0</span>	3	
H 2.3. Land use intensity in 1 km Polygon: <input type="checkbox"/> > 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span> <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span>	0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> <span style="float: right;">Yes = 3 No = 0</span>	0	
Total for H 2	Add the points in the boxes above 6	

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i> Site meets ANY of the following criteria: <span style="float: right;">points = 2</span> <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span> <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span>	0	

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      ☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      ☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      ☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.                      ☒ Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	III
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      ☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      ☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      ☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      ☒ Salt encrustations around more than 75% of the edge of the wetland                      ☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      ☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ✂ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ✂ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ✂ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ✂ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✂ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ✂ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ✂ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ✂ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ✂ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ✂ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ✂ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ✂ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

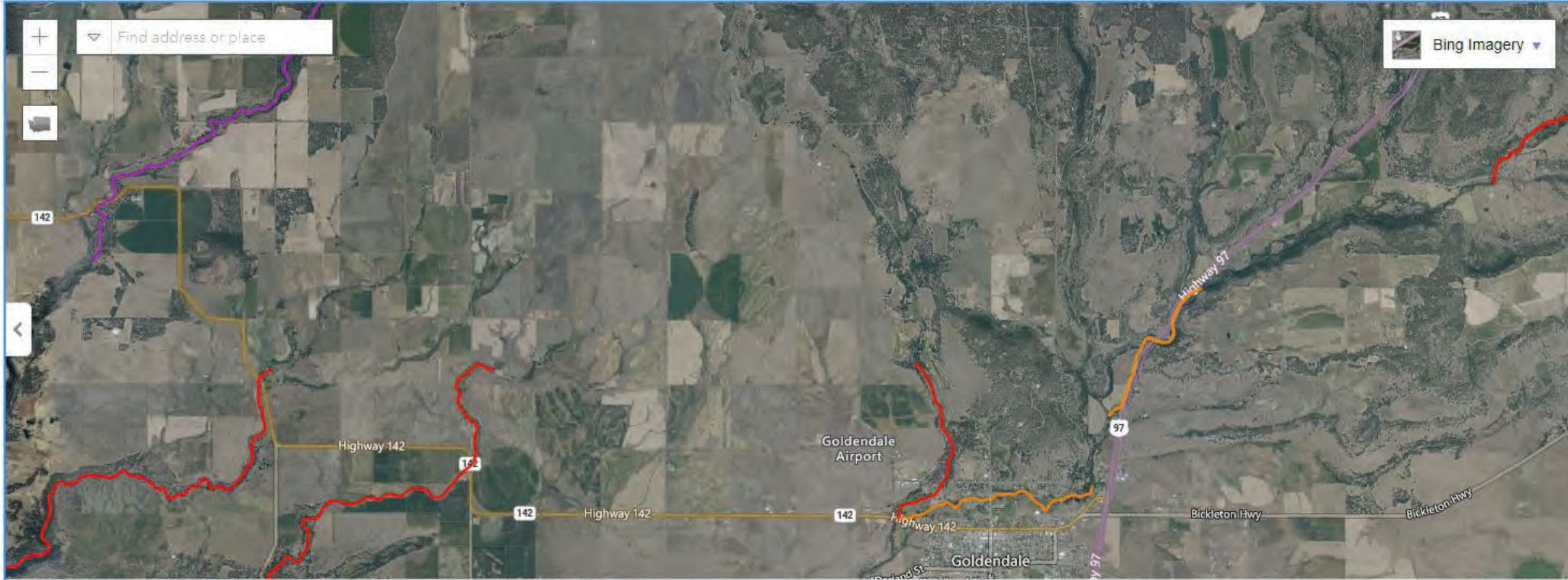
✂ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)









## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

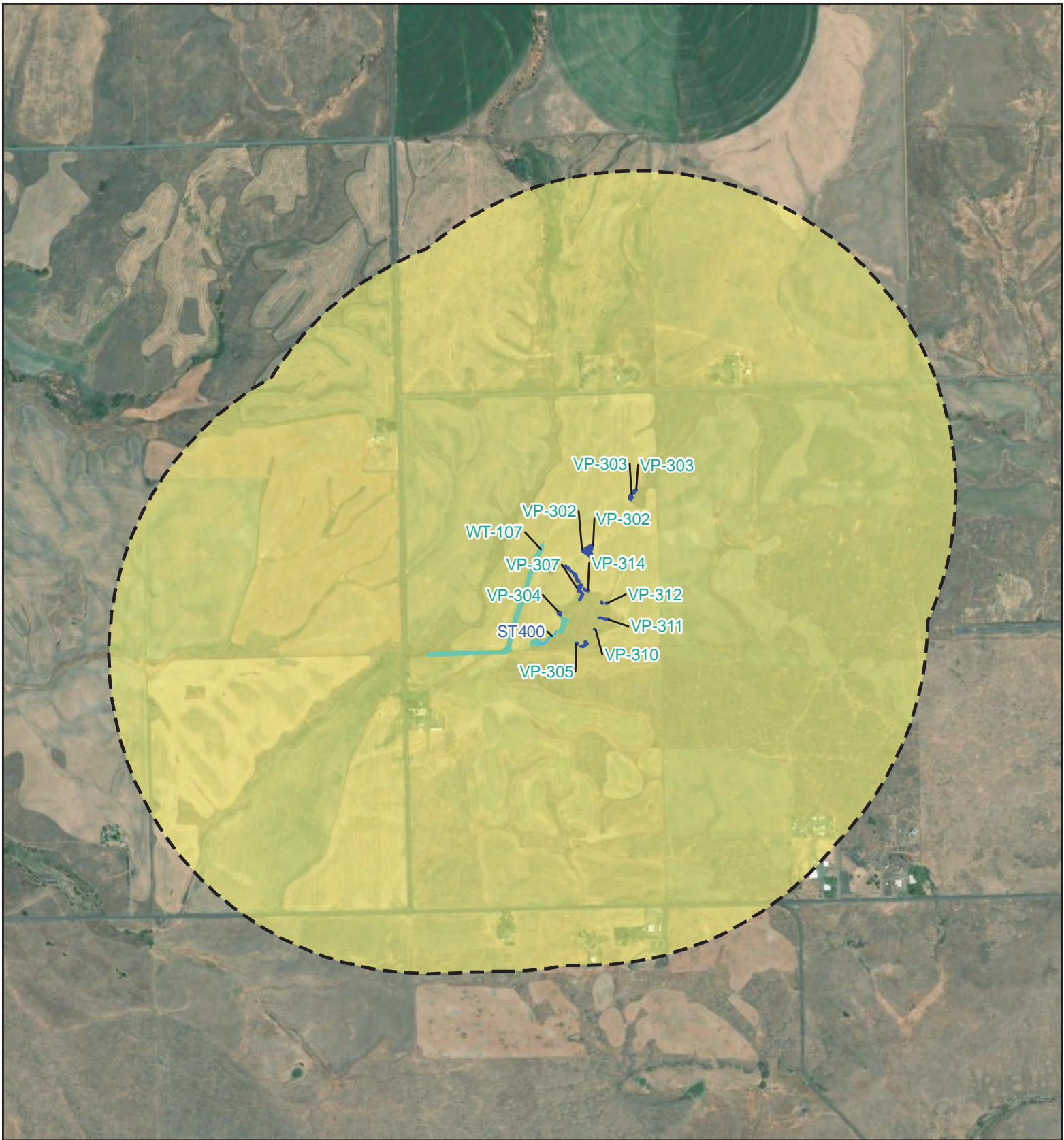
Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843






To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).



 Stream  Wetland  150-foot Buffer	<b>Cowardin Classification</b>  PEM <b>Hydroperiod</b>  Seasonally Inundated	 <b>TETRA TECH</b> <b>VP-301 through VP-314 and WT-107 through WT-109 Cowardin Classification and Hydroperiod</b>
  0 100 200 Feet		<b>Carriger Solar, LLC Project</b> Klickitat County, WA





-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): VP-314 Date of site visit: 4/15/24  
 Rated by Summer Roberts Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

## 1. Category of wetland based on FUNCTIONS

- Category I** – Total score = 22-27
- Category II** – Total score = 19-21
- Category III** – Total score = 16-18
- Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>6</b>			<b>5</b>			<b>5</b>			<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<b>II</b>	<b>III</b>
Alkali	<b>I</b>	
Wetland of High Conservation Value	<b>I</b>	
Bog and Calcareous Fens	<b>I</b>	
Old Growth or Mature Forest – slow growing	<b>I</b>	
Aspen Forest	<b>I</b>	
Old Growth or Mature Forest – fast growing	<b>II</b>	
Floodplain forest	<b>II</b>	
None of the above		

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	See Report
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	See Report
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	See Report
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	See Report
Map of the contributing basin	D 5.3	See Report
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	See Report
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

\_\_\_ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 \_\_\_ At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The wetland is on a slope (*slope can be very gradual*),  
 \_\_\_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 \_\_\_ The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

\_\_\_ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 \_\_\_ The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

**DEPRESSIONAL WETLANDS****Water Quality Functions** - Indicators that the site functions to improve water qualityPoints  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		5
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		0
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		1
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	0

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		8
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		0
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	


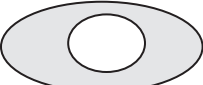

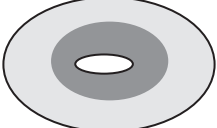
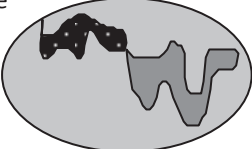

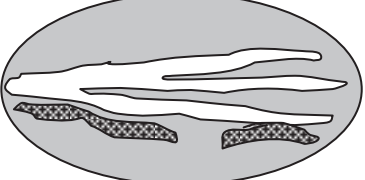
**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland <span style="float: right;">points = 2</span> Surface flooding problems are in a sub-basin farther down-gradient <span style="float: right;">points = 1</span> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ <span style="float: right;">points = 0</span> There are no problems with flooding downstream of the wetland <span style="float: right;">points = 0</span>		0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	0

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;"><b>1 check: points = 0</b></p>		0
H 1.2. Is one of the vegetation types Aquatic Bed? <span style="float: right;">Yes = 1 No = 0</span>		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i> <span style="float: right;">Yes = 3 No = 0</span></p>		0
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>3</u> <span style="float: right;">Scoring: <math>&gt; 9</math> species: points = 2</span></p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><b><math>&lt; 4</math> species: points = 0</b></p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__ 0



<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
Total for H 1	Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>50</u> = <u>50</u> %  <input checked="" type="checkbox"/> <math>\geq \frac{1}{3}</math> (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> 20-33% of 1km Polygon <span style="float: right;">points = 2</span>  <input type="checkbox"/> 10-19% of 1km Polygon <span style="float: right;">points = 1</span>  <input type="checkbox"/> &lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %  <input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span>  <input type="checkbox"/> Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p>	3
<p>H 2.3. Land use intensity in 1 km Polygon:  <input type="checkbox"/> &gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (- 2)</span>  <input checked="" type="checkbox"/> Does not meet criterion above <span style="float: right;">points = 0</span></p>	0
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>  <span style="float: right;">Yes = 3 No = 0</span></p>	0
Total for H 2	Add the points in the boxes above 6

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>  Site meets ANY of the following criteria: <span style="float: right;">points = 2</span>  <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input checked="" type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW species  <input checked="" type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input checked="" type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <input type="checkbox"/> Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span>  <input checked="" type="checkbox"/> Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0

**Rating of Value** If score is: 2 = H 1 = M 0 = L Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>☒ Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>☒ The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>☒ Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>☒ The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>☒ The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>☒ If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>☒ Salt encrustations around more than 75% of the edge of the wetland</li> <li>☒ More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>☒ A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No= <b>Not an alkali wetland</b></p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:  <input checked="" type="checkbox"/> Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems  <input checked="" type="checkbox"/> The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <p><input checked="" type="checkbox"/> The wetland is within the 100 year floodplain of a river or stream</p> <p><input checked="" type="checkbox"/> Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</p> <p><input checked="" type="checkbox"/> There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)                  Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- ☞ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☞ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☞ **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- ☞ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☞ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☞ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☞ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☞ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☞ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☞ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- ☞ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- ☞ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

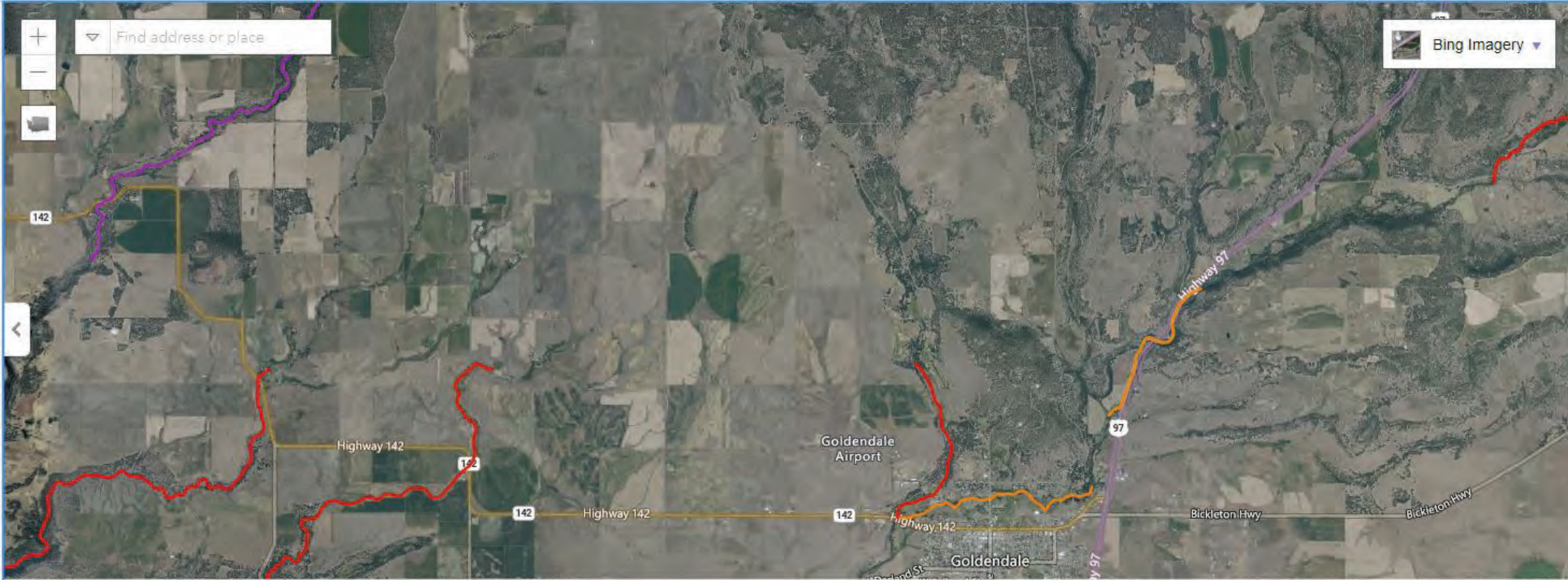
☞ **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Water Quality Atlas Map

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## Assessed Water/Sediment

Zoom to selection

Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	3724	17060108000228_001_001	5	Water	Temperature	<a href="#">View</a>
	3726	17030003000236_001_001	5	Water	Temperature	<a href="#">View</a>
	3727	17030001000538_001_001	5	Water	Temperature	<a href="#">View</a>



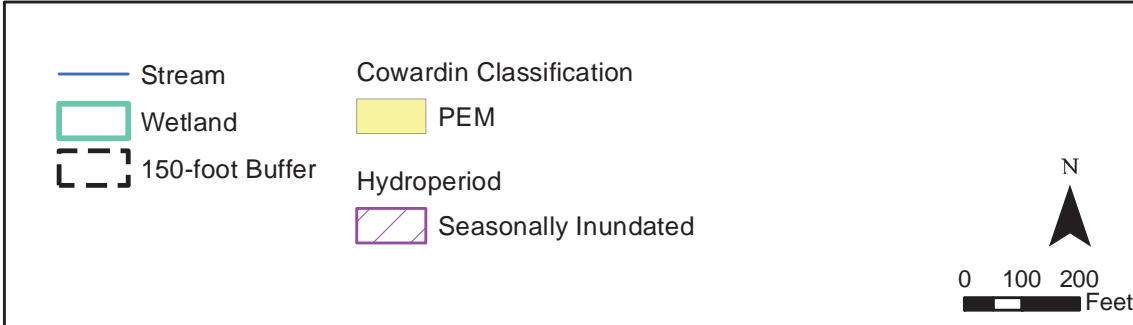
[Ecology homepage](#) > [Water & Shorelines](#) > [Water improvement](#) > [Total Maximum Daily Load process](#) > [Directory of projects](#) > [Klickitat County](#)

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

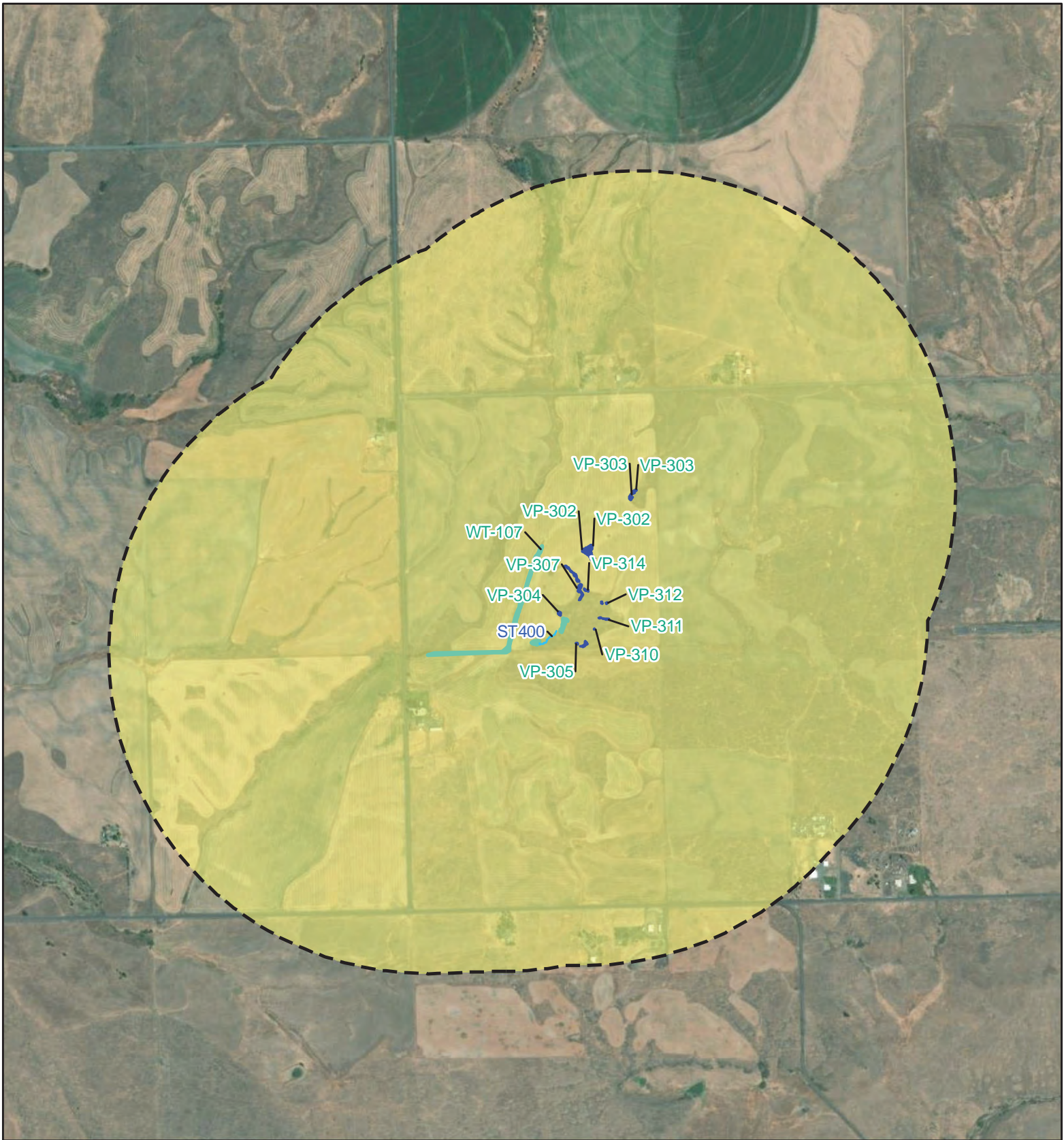
To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).








**VP-301 through VP-314 and  
WT-107 through WT-109  
Cowardin Classification  
and Hydroperiod**

---

Carriger Solar, LLC Project  
Klickitat County, WA



-  Stream
-  Wetland
-  Vernal Pool
-  1-km Buffer
- Land Use Intensity**
-  Moderate/Low

Land Use Intensity determined based on USGS National Land Cover Database (NLCD) designations and Table 3 from the Washington State Wetland Rating System for Eastern Washington: 2014 Update (Effective January 2015).



**VP-301 through VP-314 and  
WT-107 through WT-109**

Carriger Solar, LLC Project  
Klickitat County, WA



# **Appendix D. Compiled WSP Wetland Datasheets and Rating Forms**

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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-26  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-1  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.837925 Long: -120.867955 Datum: WGS 84  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <p style="font-size: 1.2em; margin-top: 10px;">The area has been in drought for most of the year.</p>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>85</u></td> <td>x 1 = <u>85</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>85</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.00</u>	Total % Cover of:	Multiply by:	OBL species <u>85</u>	x 1 = <u>85</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>85</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>85</u>	x 1 = <u>85</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>85</u> (A)	<u>85</u> (B)																	
_____ = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. <u>Eleocharis palustris</u>	<u>75</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Rorippa palustris</u>	<u>10</u>	_____	<u>OBL</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
<u>85%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
% Bare Ground in Herb Stratum <u>15.0</u>		% Cover of Biotic Crust _____																

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  

All vegetation senesced.

**SOIL**

Sampling Point: DP-1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 3/3	100					Silty Clay	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Hardpan  
 Depth (inches): 8

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Presence of surface water from adjacent stream would be the typical hydrology for this wetland.**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-2  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.837086 Long: -120.868006 Datum: WGS 84  
 Soil Map Unit Name: Munset stony silt loam, 0 to 5 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <p style="font-size: 1.2em; margin-top: 10px;"><b>Drought conditions and senesced vegetation.</b></p>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>85</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.13</u>	Total % Cover of:	Multiply by:	OBL species <u>70</u>	x 1 = <u>70</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>85</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>70</u>	x 1 = <u>70</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>75</u> (A)	<u>85</u> (B)																	
_____ = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. <u>Eleocharis palustris</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Poa palustris</u>	<u>5</u>	_____	<u>FAC</u>															
3. <u>Rorippa palustris</u>	<u>5</u>	_____	<u>OBL</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
<u>75%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
% Bare Ground in Herb Stratum <u>25.0</u>		% Cover of Biotic Crust _____																

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  

**Everything is senesced**

**SOIL**

Sampling Point: DP-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/3	100					Silty Clay	Hardpan at 6 inches
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Hardpan  
 Depth (inches): 6

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: Dp-3  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.833815 Long: -120.867476 Datum: WGS 84  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Drought conditions</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa palustris</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>30%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>70.0</u>		% Cover of Biotic Crust _____		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 30 x 3 = 90  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 30 (A) 90 (B)  
 Prevalence Index = B/A = 3.00

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
**Sparsely vegetated concave surface between two fields**

**SOIL**

Sampling Point: Dp-3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 4/6	100					Silty Clay	Surface cracks due to bedrock being close to surface
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Bedrock  
 Depth (inches): 2

Hydric Soil Present? Yes  No

Remarks:

**No holes could be dug within either of the depressions due to shallow bedrock**

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-4 Wetland K  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.824731 Long: -120.897785 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Drought Conditions; though this plot is within an area of irrigation.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca altaica</u>	<u>100</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 0 (A) 0 (B)  
 Prevalence Index = B/A = NaN

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
**Drought Conditions**

**SOIL**

Sampling Point: DP-4 Wetland K

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 4/3	100					Silt Loam	Edge of agricultural field
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)

Restrictive Layer (if present):	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type: _____ Depth (inches): _____	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Drought Conditions**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-5 Wetland K  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Riverine Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.824703 Long: -120.897732 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: <p style="font-size: 1.2em; margin-top: 10px;"><b>Drought conditions; though this plot is in an area near irrigation.</b></p>	

**VEGETATION – Use scientific names of plants.**

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b>
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
				<b>Prevalence Index worksheet:</b>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5 ft r</u> )				Total % Cover of: _____ Multiply by: _____
1. _____				OBL species <u>45</u> x 1 = <u>45</u>
2. _____				FACW species <u>50</u> x 2 = <u>100</u>
3. _____				FAC species <u>0</u> x 3 = <u>0</u>
4. _____				FACU species <u>0</u> x 4 = <u>0</u>
5. _____				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>95</u> (A) <u>145</u> (B)
				Prevalence Index = B/A = <u>1.53</u>
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b>
1. <u>Phalaris arundinacea</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Typha angustifolia</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
3. <u>Eleocharis palustris</u>	<u>5</u>		<u>OBL</u>	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____				
2. _____				
% Bare Ground in Herb Stratum <u>5.0</u>				
% Cover of Biotic Crust _____				

Remarks:  
**Vegetation is highly disturbed from agricultural activities.**

**SOIL**

Sampling Point: DP-5 Wetland K

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/2	100					Silt Loam	
4 - 16	10YR 3/2	95	10YR 5/6	5	C	M	Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 12  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 6

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Wetland starts at a culvert with backwater and continues northeast. Wetland continues on opposite side of the road.**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-6 Wetland L  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Riverine Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.825462 Long: -120.896649 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <b>Drought conditions</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus drummondii</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Phalaris arundinacea</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Eleocharis palustris</u>	<u>5</u>	_____	<u>OBL</u>	
4. <u>Rorippa palustris</u>	<u>5</u>	_____	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>90%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5.0</u>		% Cover of Biotic Crust _____		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 10 x 1 = 10  
 FACW species 80 x 2 = 160  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 90 (A) 170 (B)  
 Prevalence Index = B/A = 1.89

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: DP-6 Wetland L

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/2	100					Silt Loam	
6 - 16	10YR 3/2	90	10YR 5/6	10	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-7 Wetland L  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.825531 Long: -120.896688 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Drought conditions</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca altaica</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. <u>Cichorium intybus</u>	<u>10</u>		<u>FACU</u>	
3. <u>Verbascum densiflorum</u>	<u>10</u>		<u>NI</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>60%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>40.0</u>		% Cover of Biotic Crust _____		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 0 x 5 = 0  
 Column Totals: 10 (A) 40 (B)  
 Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
**The plot is on the edge of an agricultural area.**

**SOIL**

Sampling Point: DP-7 Wetland L

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 3/3	100					Silt Loam	Edge of agricultural field
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes \_\_\_\_\_ No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                              | <input type="checkbox"/> Water Marks (B1) (Riverine)               |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Biotic Crust (B12)                            | <input type="checkbox"/> Sediment Deposits (B2) (Riverine)         |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                   | <input type="checkbox"/> Drift Deposits (B3) (Riverine)            |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)            | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    | <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)      | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)         | <input type="checkbox"/> Presence of Reduced Iron (C4)                 | <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7)                        | <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 | <input type="checkbox"/> Other (Explain in Remarks)                    | <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-8 Wetland H  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.82988 Long: -120.895394 Datum: WGS 84  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <p style="font-size: 1.2em; margin-top: 10px;"><b>Drought conditions; plot had ongoing irrigation during field visit.</b></p>	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>200</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.35</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>200</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>85</u> (A)	<u>200</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Phalaris arundinacea</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Agrostis scabra</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Dipsacus laciniatus</u>	<u>5</u>		<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
<u>85%</u> = Total Cover																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. _____	_____	_____	_____															
_____ = Total Cover																		
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____																		
Remarks: <p style="font-size: 1.2em; margin-top: 10px;"><b>Vegetation is highly disturbed from adjacent agricultural activities.</b></p>																		

**SOIL**

Sampling Point: DP-8 Wetland H

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/2	100					Silt Loam	
6 - 12	10YR 3/2	95	10YR 5/6	5	C	PL / M	Silty Clay Loam	
12 - 16	10YR 3/2	85	10YR 5/6	5	C	PL / M	Silty Clay Loam	
12 - 16	10YR 3/2		10YR 6/2	10	D	M		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 10

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Drought Conditions with irrigation ongoing. Hydrology likely present for 14 days other than with the active irrigation.**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-9 Wetland H  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.829929 Long: -120.895437 Datum: WGS 84  
 Soil Map Unit Name: Goldendale silt loam, basalt substratum, 2 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Plot is in an area of tilling and agricultural activities. Drought conditions with irrigation ongoing.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Triticum aestivum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>80.0</u> % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 0 (A) 0 (B)  
 Prevalence Index = B/A = NaN

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
**Tilled farm field**



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-10 Wetland I  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.827012 Long: -120.896942 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <b>Drought conditions; plot was actively irrigated.</b>	

**VEGETATION – Use scientific names of plants.**

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5 ft r</u> )				Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
2. _____	_____	_____	_____	FACW species <u>100</u> x 2 = <u>200</u>
3. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
4. _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
5. _____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
_____ = Total Cover				Column Totals: <u>100</u> (A) <u>200</u> (B)
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				Prevalence Index = B/A = <u>2.00</u>
1. <u>Phalaris arundinacea</u>	<u>95</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Juncus acutus</u>	<u>5</u>		<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100%</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Remarks:  
**Vegetation is disturbed from adjacent agricultural activities.**

**SOIL**

Sampling Point: DP-10 Wetland I

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 3/2	100					Silt Loam	
8 - 12	10YR 3/2	90	10YR 5/6	10	C	PL / M	Silty Clay Loam	
12 - 16	10YR 3/2	85	10YR 5/6	5	C	PL / M	Silty Clay Loam	
12 - 16	10YR 3/2		10YR 6/2	10	D	M		
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

Portion of wetland recently tilled.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Drought Conditions; actively irrigated

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-11 Wetland I  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.827019 Long: -120.896834 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

**Agricultural fields recently tilled, planted, and irrigated. Data points 16 and 17 are basically the same; though these plots were deemed artificial due to the irrigation.**

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )				
1. <u>Triticum aestivum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>80.0</u>		% Cover of Biotic Crust _____		

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:

**Recently planted farm field**

**SOIL**

Sampling Point: DP-11 Wetland I

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 4/3	100					Silt Loam	Edge of agricultural field
8 - 16	10YR 3/2	100						
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

Recently tilled fields

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Drought conditions; actively irrigated.



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-12 Wetland J  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.826456 Long: -120.897552 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: <p style="font-size: 1.2em; margin-top: 10px;"><b>Drought conditions; plot is actively irrigated.</b></p>	

**VEGETATION – Use scientific names of plants.**

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5 ft r</u> )				Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
2. _____	_____	_____	_____	FACW species <u>70</u> x 2 = <u>140</u>
3. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
4. _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
5. _____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
_____ = Total Cover				Column Totals: <u>70</u> (A) <u>140</u> (B)
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				Prevalence Index = B/A = <u>2.00</u>
1. <u>Phalaris arundinacea</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Carex .spp</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>70%</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5.0</u>		% Cover of Biotic Crust <u>25</u>		

Remarks:  
**Disturbed vegetation from adjacent agricultural activities**

**SOIL**

Sampling Point: DP-12 Wetland J

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 1	10YR 2/1	100					Muck	
1 - 12	10YR 5/6	60	10YR 5/2	40	RM	PL / M	Mucky Loam/Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

Portion of wetland recently tilled.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): 0.5  
 Water Table Present? Yes  No  Depth (inches): surface  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): surface

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Drought Conditions; actively irrigated.

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-27  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-13 Wetland J  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.826492 Long: -120.897682 Datum: WGS 84  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Plot is tilled, planted, and irrigated. Drought conditions are present.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Triticum aestivum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>10%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 0 (A) 0 (B)  
 Prevalence Index = B/A = NaN

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
**Planted farm field**

**SOIL**

Sampling Point: DP-13 Wetland J

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/3	100					Silt Loam	Edge of agricultural field
6 - 12	10YR 3/2	100					Silt Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**Tilled farm field**

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Drought conditions; active irrigation.**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-28  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-14 Wetland G  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.834579 Long: -120.904791 Datum: WGS 84  
 Soil Map Unit Name: Konert silt loam, 0 to 2 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: <b>Drought conditions; the wetland is grazed by horses and has artificial hydrology from an upstream fish hatchery.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>95</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Scirpus lacustris</u>	<u>5</u>	_____	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 100 x 2 = 200  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 100 (A) 200 (B)  
 Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
**Wetland vegetation is disturbed by grazing horses.**

**SOIL**

Sampling Point: DP-14 Wetland G

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 14	10YR 2/2	100					Mucky Loam/Clay	Other holes dug to the east of the wetland had redox and depletions in the matrix and pore linings around 10 inches.
14 - 18	10YR 2/2	85	10YR 4/2	15	D	PL / M	Mucky Loam/Clay	Other holes dug to the east of the wetland had redox and depletions in the matrix and pore linings around 10 inches.
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock  
 Depth (inches): 18

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 16  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 1

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**Drought conditions; hydrology comes from the fish hatchery upstream of the wetland.**

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-28  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-15 Wetland G  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): B 8 Lat: 45.834537 Long: -120.904829 Datum: WGS 84  
 Soil Map Unit Name: Konert silt loam, 0 to 2 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Drought conditions present; fill from the driveway and adjacent developments present throughout uplands.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Triticum aestivum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>NI</u>	
2. <u>Rubus laciniatus</u>	<u>15</u>	_____	<u>FACU</u>	
3. <u>Anthemis cotula</u>	<u>10</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>85%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 25 x 4 = 100  
 UPL species 0 x 5 = 0  
 Column Totals: 25 (A) 100 (B)  
 Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
**Invasive and disturbed vegetation are dominant species.**

**SOIL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/3							
-								
-								
-								
-								
-								
-								
-								
-								
-								
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 1 cm Muck (A9) (LRR C)				
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> 2 cm Muck (A10) (LRR B)				
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1)		<input type="checkbox"/> Reduced Vertic (F18)				
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Red Parent Material (TF2)				
<input type="checkbox"/> Stratified Layers (A5) (LRR C)		<input type="checkbox"/> Depleted Matrix (F3)		<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)		<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Depressions (F8)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Vernal Pools (F9)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)								
<b>Restrictive Layer (if present):</b> Type: <u>Rock\Fill Material</u> Depth (inches): <u>4</u>						<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
<b>Restrictive layer; may have high water table or saturation present.</b>			



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 2021-07-28  
 Applicant/Owner: Cypress Creek Renewables State: Washington Sampling Point: DP-18  
 Investigator(s): Brandon Stimac & Bridget Wojtala Section, Township, Range: S36 T5N R15E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): B 8 Lat: 45.831283 Long: -120.898268 Datum: WGS 84  
 Soil Map Unit Name: Setnum silt loam, 0 to 3 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: <b>Irrigation occurring at time of delineation. Soil is still dry.</b>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>100</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 100 x 2 = 200  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 100 (A) 200 (B)  
 Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:

**SOIL**

Sampling Point: DP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/2	100					Silt Loam	
6 - 16	10YR 4/3	100					Silt Loam	Bone dry soil at 16"
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)	<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)		<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
--	---

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> )	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )
	<input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> )
	<input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )
	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP: Wetland A

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/29/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-1  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S12 T4N R15E  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): CONCAVE Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8478 Long: -120.8758 Datum: NAD1983  
 Soil Map Unit Name: 97-Munsat stony silt loam, 0 to 5% slope NWI classification: PEM1C  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <u>Verification of NWI wetland. It is unseasonably dry this year - see WETS table for additional data.</u>			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>50</u> x 1 = <u>50</u>
3. _____				FACW species <u>50</u> x 2 = <u>100</u>
4. _____				FAC species <u>0</u> x 3 = <u>0</u>
5. _____				FACU species <u>2</u> x 4 = <u>8</u>
_____ = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>102</u> (A) <u>158</u> (B)
				Prevalence Index = B/A = <u>1.54</u>
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:
1. <u>Carex prae-gracilis</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Eleocharis palustris</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
3. <u>Taraxacum officinale</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. <u>Poa bulbosa</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>1</u>		% Cover of Biotic Crust <u>0</u>		
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks:

**SOIL**

Sampling Point: SP-1

**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	7.5 YR 3/2	100					loam	many roots
8-13	10 YR 4/1	95	2.5 YR 3/4	5	C	M	loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

- Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) | <b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b><br><input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|--|--|
- <sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

- Wetland Hydrology Indicators:**
- |  |  |   |
|--|--|---|
| <b>Primary Indicators (minimum of one required; check all that apply)</b>  |  | <b>Secondary Indicators (2 or more required)</b>  |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP:

Wetland A

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/29/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-2  
 Investigator(s): B. Locke, B. Wojtala Section, Township, Range: S12 T4N R1E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): flat Slope (%): 15  
 Subregion (LRR): LRB Lat: 45.8477 Long: -120.8756 Datum: NAD1983  
 Soil Map Unit Name: 97-Munset stony silt loam, 0 to 5% slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Upland pit is approximately 10 feet above wetland pit. It is unseasonably dry - see WETS table for additional info.</u>		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>0</u>	x 2 = <u>0</u>
4. _____	_____	_____	_____	FAC species <u>0</u>	x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>35</u>	x 4 = <u>140</u>
Herb Stratum (Plot size: <u>5 feet</u> )				UPL species <u>25</u>	x 5 = <u>125</u>
1. <u>Achillea millefolium</u>	<u>15</u>	<u>NY</u>	<u>FACU</u>	Column Totals:	<u>105</u> (A) <u>470</u> (B)
2. <u>Poa bulbosa</u>	<u>20</u>	<u>NY</u>	<u>FACU</u>	Prevalence Index = B/A = <u>4.41</u>	
3. <u>Erodium cicutarium</u>	<u>30</u>	<u>Y</u>	<u>NL</u>	Hydrophytic Vegetation Indicators:	
4. <u>Lomatium nudicaule</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	___ Dominance Test is >50%	
5. <u>Bromus tectorum</u>	<u>15</u>	<u>N</u>	<u>NL</u>	___ Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____	_____	_____	_____	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum <u>1</u>		% Cover of Biotic Crust <u>0</u>			
Remarks:					

**SOIL**

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-13	10YR 4/3	100					sandy loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: *Soil is very dry*

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/29/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-3  
 Investigator(s): R. Wolke, B. Wojtala Section, Township, Range: S12 T4N R15E  
 Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8469 Long: -120.8774 Datum: NAD 1983  
 Soil Map Unit Name: 97 - Munset stony silt loam, 0 to 5% slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation  Soil  or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation  Soil  or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <u>Upland verification point in low area adjacent to NHD line. WETS tables indicate unseasonably dry water year</u>			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u>	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u>	(A/B)
4. _____				Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species <u>35</u>	x 1 = <u>35</u>
1. _____				FACW species <u>15</u>	x 2 = <u>30</u>
2. _____				FAC species <u>0</u>	x 3 = <u>0</u>
3. _____				FACU species <u>5</u>	x 4 = <u>20</u>
4. _____				UPL species <u>0</u>	x 5 = <u>0</u>
5. _____				Column Totals: <u>55</u> (A)	<u>85</u> (B)
_____ = Total Cover				Prevalence Index = B/A = <u>1.54</u>	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Camassia quamash</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Poa bulbosa</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. <u>Eleocharis palustris</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Taeniatherum caput-medusae</u>	<u>45</u>	<u>Y</u>	<u>NL</u>	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
7. _____					
8. _____					
_____ = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____					

Remarks: No hydrophytic vegetation indicators met.

SOIL

Sampling Point: SP-3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/3	99	7.5YR 4/6	1	C	M	Sandy loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: Soil does not meet hydric soil indicators

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required, check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil is moist



ID:

MP:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/29/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-4  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S12 T4N R1E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8512 Long: -120.8746 Datum: NAD 1983  
 Soil Map Unit Name: 97 - Munset stony silt loam, 0 to 5% NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: <u>Small depression where drainage connects to NHD line. It is unseasonably dry - see WETS table for additional info.</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species <u>40</u>	x 1 = <u>40</u>
3. _____				FACW species <u>2</u>	x 2 = <u>4</u>
4. _____				FAC species _____	x 3 = _____
5. _____				FACU species _____	x 4 = _____
Herb Stratum (Plot size: <u>5 feet</u> )				UPL species _____	x 5 = _____
1. <u>Eleocharis palustris</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	Column Totals: <u>42</u> (A)	<u>44</u> (B)
2. <u>Navarretia intertexta</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	Prevalence Index = B/A = <del>10.4</del> <u>1.04</u>	
3. _____				Hydrophytic Vegetation Indicators:	
4. _____				<input checked="" type="checkbox"/> Dominance Test is >50%	
5. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____				____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____				____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum <u>45</u> % Cover of Biotic Crust <u>15</u>					

Remarks: Biotic crust present throughout depression.

**SOIL**

Sampling Point: SP-4

**Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-4	7.5 YR 3/80		7.5 YR 4/6	20	C	M	silt loam	
4-8	7.5 YR 3/75		5 YR 3/4	25	C	M	clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: compacted soil  
 Depth (inches): 8 inches bgs

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes  No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: soil is moist.

ID:

MP:

Wetland B3

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/29/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-5  
 Investigator(s): R. Wicka, B. Wojtala Section, Township, Range: S 12 T 4 N R 15 E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Flat Slope (%): 15  
 Subregion (LRR): LRR B3 Lat: 45.8513 Long: -120.8744 Datum: NAD 1983  
 Soil Map Unit Name: 97-Monset stony silt loam NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: <u>Area looks as if it was man-made. It is unseasonably dry this year - see WETs table for more info.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
4. _____				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species <u>0</u>	x 1 = <u>0</u>
3. _____				FACW species <u>30</u>	x 2 = <u>60</u>
4. _____				FAC species <u>0</u>	x 3 = <u>0</u>
5. _____				FACU species <u>0</u>	x 4 = <u>0</u>
Herb Stratum (Plot size: <u>5 feet</u> )				UPL species <u>40</u>	x 5 = <u>200</u>
1. <u>Bromus tectorum</u>	<u>60</u>	<u>Y</u>	<u>NL</u>	Column Totals: <u>35</u>	(A) <u>200</u> (B) <u>235</u>
2. <u>Lomatium triternatum</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	Prevalence Index = B/A = <u>2.42</u>	
3. <u>Lupinus sericeus sericeus</u>	<u>5</u>	<u>N</u>	<u>NL</u>	Hydrophytic Vegetation Indicators:	
4. <u>Epidilobium hirtatum</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	___ Dominance Test is >50%	
5. _____				___ Prevalence Index is ≤3.0 <sup>1</sup>	
6. _____				___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
7. _____				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____				___ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
1. _____					
2. _____					
% Bare Ground in Herb Stratum <u>1</u> % Cover of Biotic Crust _____					
Remarks:					

**SOIL**

Sampling Point: SP-5

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10 YR 4/3	100					silty loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: Soil is dry

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP: Wetland C

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20
Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-6
Investigator(s): R. Duce, B. Wojtala Section, Township, Range: S1 T4N R1E
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 15
Subregion (LRR): LRR B Lat: 45.8541 Long: -120.8748 Datum: NAD1983
Soil Map Unit Name: 30B - Rocky-lorena complex, 2 to 15% NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No
Hydric Soil Present? Yes No
Wetland Hydrology Present? Yes No
Is the Sampled Area within a Wetland? Yes No
Remarks: Depression that collects water from uphill ag fields. Feeds water into NHD stream. It is unseasonably dry this year. see WETS table for more info.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ) Absolute % Cover Dominant Species? Indicator Status
1.
2.
3.
4.
= Total Cover
Sapling/Shrub Stratum (Plot size: )
1.
2.
3.
4.
5.
= Total Cover
Herb Stratum (Plot size: 5 feet)
1. Navarretia intertexta 75 Y FACW
2. Navarretia intertexta 75 Y FACW
3.
4.
5.
6.
7.
8.
75 = Total Cover
Woody Vine Stratum (Plot size: )
1.
2.
= Total Cover
% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 15
Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species x 1 =
FACW species 75 x 2 = 150
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals: 75 (A) 150 (B)
Prevalence Index = B/A = 2
Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is <=3.0
Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
Hydrophytic Vegetation Present? Yes No

**SOIL**

Sampling Point SP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	85	5YR 4/6	15	C	M	silty loam	
8-12	7.5YR 2.5/6	60	7.5YR 4/4	40			loam	gravelly
8-12	7.5YR 4/4	40					loam	gravelly

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rocks  
Depth (inches): 12

Hydric Soil Present? Yes  No

Remarks: Very rocky at 12 inches bgs.

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil is moist

ID:

MP:

Wetland C

## WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Wichita County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-7  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S1 T4N R1E  
 Landform (hillslope, terrace, etc.): top of hill Local relief (concave, convex, none): convex Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8541 Long: -120.8748 Datum: NAD 1983  
 Soil Map Unit Name: 30B - Rocky-Lorena complex, 2 to 15% NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <u>Upland pit approximately 10 feet above wetland pit. It is unseasonably dry this year. See WETS table for additional data.</u>			

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____				= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Prevalence Index worksheet:	
1. <u>Lupinus sericeus</u>	<u>20</u>	<u>Y</u>	<u>NL</u>	Total % Cover of:	Multiply by:
2. _____				OBL species <u>0</u>	x 1 = <u>0</u>
3. _____				FACW species <u>1</u>	x 2 = <u>2</u>
4. _____				FAC species <u>0</u>	x 3 = <u>0</u>
5. _____				FACU species <u>5</u>	x 4 = <u>20</u>
	<u>20</u>			UPL species <u>0</u>	x 5 = <u>0</u>
= Total Cover				Column Totals:	<u>0</u> (A) <u>22</u> (B)
Herb Stratum (Plot size: <u>5 feet</u> )				Prevalence Index = B/A = <u>3.166</u>	
1. <u>Lomatium triternatum</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators:	
2. <u>Achillea millefolium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	___ Dominance Test is >50%	
3. <u>Bromus tectorum</u>	<u>90</u>	<u>Y</u>	<u>NL</u>	___ Prevalence Index is ≤3.0 <sup>1</sup>	
4. <u>Lamassia quamash</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Erodium cicutarium</u>	<u>15</u>	<u>N</u>	<u>NL</u>	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____				___ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
8. _____					
= Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum <u>1</u> % Cover of Biofilm Crust <u>0</u>					
Remarks:					

**SOIL**

Sampling Point: SP-7

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10 YR 3/3	100					loam	gravel & boulders

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: Soil is dry

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



ID:

MP: Wetland D

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-B  
 Investigator(s): R. Locke, B. Wojtal Section, Township, Range: S 1 T 4 N R 1 E  
 Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): Concave Slope (%): 10  
 Subregion (LRR): LRR B Lat: 45.8550 Long: -120.8746 Datum: NAD 1983  
 Soil Map Unit Name: 109A - Goldenlake silt loam, basalt substratum NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: <u>Meadow abuts NHD line. It is seas unseasonably dry this year - see WETs table for more info.</u>					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____					
				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species	x 1 =
3. _____				FACW species <u>150</u>	x 2 = <u>300</u>
4. _____				FAC species	x 3 =
5. _____				FACU species	x 4 =
				= Total Cover	
Herb Stratum (Plot size: <u>5 feet</u> )				UPL species	x 5 =
1. <u>Camassia quamash</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	Column Totals: <u>150</u> (A)	<u>300</u> (B)
2. <u>Potentilla sp.</u>	<u>1</u>	<u>N</u>	<u>-</u>	Prevalence Index = B/A = <u>2</u>	
3. <u>Alopecurus pratensis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>		
4. <u>Phalaris arundinacea</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>		
5. _____					
6. _____					
7. _____					
8. _____					
				= Total Cover	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____				<input checked="" type="checkbox"/> Dominance Test is >50%	
2. _____				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0'	
				Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>					

Remarks:

**SOIL**

Sampling Point: SP-8

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10 YR 7/2	85	7.5 YR 4/6	15	C	M	loam	
6-13	10 YR 7/1	99	7.5 YR 4/6	1	C	M	clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>2</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

<sup>2</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes  No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP:

WETLAND DETERMINATION DATA FORM – Arid West Region

Wetland ID

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-9  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S1 T4 N R1 E  
 Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): flat Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8550 Long: -120.8745 Datum: NAD 1983  
 Soil Map Unit Name: 69A - Goldendale silt loam, basalt substratum NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Upland pit is approximately 5 feet above wetland pit. It is unreasonably dry - see WETS table for more info.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus douglasii</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____				
10 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>36</u> x 2 = <u>72</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>16</u> x 4 = <u>64</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>132</u> (A) <u>376</u> (B) Prevalence Index = B/A = <u>2.84</u>
1. <u>Crataegus douglasii</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
20 = Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa bulbosa</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
2. <u>Wyethia amplexicaulis</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Taraxacum officinale</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
4. <u>Alopecurus pratensis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5. <u>Camassia quamash</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
6. <u>Bromus tectorum</u>	<u>30</u>	<u>Y</u>	<u>NL</u>	
7. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
8. _____				
132 = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Hydrophytic Vegetation Present? Yes  No

Remarks:

**SOIL**

Sampling Point: SP-9

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/2	100					loam	
5-12	10YR 2/1	100					clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-10  
 Investigator(s): R. Locke & B. Wojtala Section, Township, Range: S11T4N R15E  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8464 Long: -120.8851 Datum: NAD 1983  
 Soil Map Unit Name: 25A Leidl extremely cobbly ashly loam NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: Soil pit in depression at the end (bottom) of Stream 2. It is unseasonably dry this year - see WETS table for additional info.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0%</u> (A/B)
4. _____				Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
				OBL species <u>0</u>	x 1 = <u>0</u>
				FACW species <u>0</u>	x 2 = <u>0</u>
				FAC species <u>0</u>	x 3 = <u>0</u>
				FACU species <u>10</u>	x 4 = <u>40</u>
				UPL species <u>0</u>	x 5 = <u>0</u>
				Column Totals: <u>10</u> (A)	<u>40</u> (B)
				Prevalence Index = B/A = <u>4</u>	
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Eriogonum thymoides</u>	<u>5</u>	<u>Y</u>	<u>NL</u>	<input type="checkbox"/> Dominance Test is >50%	
2. _____				<input type="checkbox"/> Prevalence Index is ≤3.0'	
3. _____				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
1. <u>Poa bulbosa</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
2. <u>Hypochaeris radicata</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
% Bare Ground in Herb Stratum <u>90</u>					
% Cover of Biotic Crust _____					

Remarks: No hydrophytic vegetation indicators met

**SOIL**

Sampling Point: SP-10

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-13	10YR 4/3	100					Silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
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**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:  
*Soil is very dry.*

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Silt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
*No wetland hydrology indicators met.*

**WETLAND DETERMINATION DATA FORM - Arid West Region**

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-11  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S11 T4N R15E  
 Landform (hillslope, terrace, etc.): toe slope Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRR B Lat: 45.8464 Long: -120.8898 Datum: NAD 1983  
 Soil Map Unit Name: ZSA-Leidl extremely cobbly ashy loam NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Soil pit in low spot at end of NHD line. It is unseasonably dry this year - see WETS table for additional info.			

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____				Prevalence Index worksheet:	
= Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				OBL species <u>0</u>	x 1 = <u>0</u>
1. <u>Eriogonum strictum</u>	<u>95</u>	<u>Y</u>	<u>NL</u>	FACW species <u>0</u>	x 2 = <u>0</u>
2. _____				FAC species <u>0</u>	x 3 = <u>0</u>
3. _____				FACU species <u>10</u>	x 4 = <u>40</u>
4. _____				UPL species <u>0</u>	x 5 = <u>0</u>
5. _____				Column Totals: <u>10</u> (A)	<u>40</u> (B)
= Total Cover <u>95</u>				Prevalence Index = B/A = <u>4</u>	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Hypochaeris radicata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. _____					
4. _____					
= Total Cover <u>10</u>				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
= Total Cover _____					
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust <u>0</u>					
Remarks: <u>No hydrophytic vegetation indicators met.</u>					

SOIL

Sampling Point: SP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-13	10 YR 3/3	100					Sandy loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks: Soil is moist.

HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes \_\_\_\_\_ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



ID:

MP:

Wetland E

## WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-12  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S14N R15E  
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): LPRC Lat: 45.8549 Long: -120.8845 Datum: NAD1983  
 Soil Map Unit Name: 2SA - Leidl extremely cobbly ashy loam NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: <u>Wet meadow adjacent to NHD line, It is unseasonably dry - see WETS tables for more info.</u>					

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____					
			= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species <u>0</u>	x 1 = <u>0</u>
3. _____				FACW species <u>35</u>	x 2 = <u>70</u>
4. _____				FAC species <u>75</u>	x 3 = <u>225</u>
5. _____				FACU species <u>0</u>	x 4 = <u>0</u>
			= Total Cover	UPL species <u>0</u>	x 5 = <u>0</u>
				Column Totals: <u>110</u> (A)	<u>295</u> (B)
				Prevalence Index = B/A =	<u>2.6</u>
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Camassia quamash</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Wgethia amplexicaulis</u>	<u>20</u>	<u>N</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. <u>Holcus lanatus</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____					
6. _____					
7. _____					
8. _____					
			<u>110</u> = Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. _____					
			= Total Cover		
% Bare Ground in Herb Stratum <u>1</u>	% Cover of Biotic Crust <u>0</u>				
Remarks:					

**SOIL**

Sampling Point: SP-12

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	7.5 YR 2.5/2	80	2.5 YR 4/6	20	C	M	silt loam	many roots
7-10	7.5 YR 2.5/2	99	2.5 YR 2.5/4	1	C	M	silt loam	✓

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<p><sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: soil is moist

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ID:

MP:

Wetland E

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 1 City/County: Klickitat County Sampling Date: 4/30/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-13  
 Investigator(s): Bilwike B. Wojtala Section, Township, Range: S14N R15E  
 Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): flat Slope (%): 5  
 Subregion (LRR): LRR C Lat: 45.8553 Long: -120.8838 Datum: NAD 1983  
 Soil Map Unit Name: 25A - Leidl extremely cobbly, ashy loam NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <u>Meadow adjacent to NTID line. Both soil pits are within same stream bank. It is unseasonably dry - see WETS table.</u>			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____					
= Total Cover					
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species <u>0</u>	x 1 = <u>0</u>
3. _____				FACW species <u>20</u>	x 2 = <u>40</u>
4. _____				FAC species <u>0</u>	x 3 = <u>0</u>
5. _____				FACU species <u>90</u>	x 4 = <del>360</del> <u>320</u>
= Total Cover				UPL species <u>10</u>	x 5 = <del>50</del> <u>50</u>
				Column Totals: <u>110</u> (A)	<u>410</u> (B)
				Prevalence Index = B/A = <u>3.72</u>	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Camissonia guamaosh</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	___ Dominance Test is >50%	
2. <u>Poa bulbosa</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	___ Prevalence Index is ≤3.0 <sup>1</sup>	
3. <u>Lomatium triternatum</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Festuca idahoensis</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. <u>Geranium carolinianum</u>	<u>10</u>	<u>N</u>	<u>NL</u>		
6. _____					
7. _____					
8. _____					
<u>120</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

**SOIL**

Sampling Point: SP-13

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100					silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: Rock  
 Depth (inches): 12 inches bags

Hydric Soil Present? Yes  No

Remarks: Soil is clay

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Site 2 City/County: Klickitat County Sampling Date: 5/1/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-14  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S31 T5N R16E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): flat Slope (%): 25  
 Subregion (LRR): LRR E Lat: 45.8724 Long: -120.8613 Datum: NAD 1983  
 Soil Map Unit Name: 12D-Lyville bouldery loam, 2 to 20% slopes NW classification: PUBFX  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Soil pit within NWI. Site is steeply sloped, and is 15 feet above NHD stream. It is unseasonably dry this year - see WETs table for additional info.</u>	

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus ponderosa</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____				
<u>10</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				Prevalence Index worksheet:
1. <u>Quercus garryana</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Eriogonum strictum</u>	<u>5</u>	<u>N</u>	<u>NL</u>	OBL species <u>0</u> x 1 = <u>0</u>
3. _____				FACW species <u>0</u> x 2 = <u>0</u>
4. _____				FAC species <u>0</u> x 3 = <u>0</u>
5. _____				FACU species <u>40</u> x 4 = <u>160</u>
<u>35</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>40</u> (A) <u>160</u> (B)
				Prevalence Index = B/A = <u>4</u>
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:
1. <u>Carex geyeri</u>	<u>75</u>	<u>Y</u>	<u>NL</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____				<input type="checkbox"/> 2 - Dominance Test is >50%
3. _____				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0'
4. _____				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup>
6. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____				
9. _____				
10. _____				
11. _____				
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?
1. _____				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>1</u>				
Remarks: <u>20% duff layer of oak leaves</u>				

SOIL

Sampling Point: SP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>		
0-6	10YR 7/2	100					loam	many rocks

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):  
 Type: Rock  
 Depth (inches): 16 inches kgj

Hydric Soil Present? Yes  No

Remarks: Large boulders throughout plot 20%

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology

## WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Site 2 City/County: Klickitat County Sampling Date: 5/2/20  
 Applicant/Owner: Cypress Creek Renewables State: WAO Sampling Point: SP-15  
 Investigator(s): R. Locke B. Wojtala Section, Township, Range: S31 T5N R14E  
 Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRR E Lat: 45.8716 Long: -120.8610 Datum: NAD 1983  
 Soil Map Unit Name: 12D - Lyville boulder loam, 2 to 20% slope NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: <u>Soil pit along stream terrace of NHD stream. It is unseasonably dry during this year - see WETS table for additional data.</u>			

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Pinus ponderosa</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____				Prevalence Index worksheet:	
<u>30</u> = Total Cover				Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: _____)				OBL species <u>0</u>	x 1 = <u>0</u>
1. _____				FACW species <u>0</u>	x 2 = <u>0</u>
2. _____				FAC species <u>0</u>	x 3 = <u>0</u>
3. _____				FACU species <u>30</u>	x 4 = <u>120</u>
4. _____				UPL species <u>0</u>	x 5 = <u>0</u>
5. _____				Column Totals: <u>30</u> (A)	<u>120</u> (B)
Herb Stratum (Plot size: <u>5 feet</u> )				Prevalence Index = B/A = <u>4.0</u>	
1. <u>Carex geyeri</u>	<u>85</u>	<u>Y</u>	<u>NL</u>	Hydrophytic Vegetation Indicators:	
2. _____				___ 1 - Rapid Test for Hydrophytic Vegetation	
3. _____				___ 2 - Dominance Test is >50%	
4. _____				___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
5. _____				___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6. _____				___ 5 - Wetland Non-Vascular Plants <sup>1</sup>	
7. _____				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
8. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
9. _____				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
10. _____					
11. _____					
<u>85</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>5</u>					
Remarks:					

SOIL

Sampling Point: SP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100					Siltloam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>Rock</u> Depth (inches): <u>6 inches bgs</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.

Remarks: Soil is dry



## WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Site 2 City/County: Klickitat County Sampling Date: 5/1/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-16  
 Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S 31 T5N R16 E  
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): LRBE Lat: 45.8731 Long: -120.8618 Datum: NAD 1983  
 Soil Map Unit Name: H<sup>2</sup> Lyville boulding loam 2 to 30% slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_ Soil \_\_\_ or Hydrology \_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_  
 Are Vegetation \_\_\_ Soil \_\_\_ or Hydrology \_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes ___	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes ___	No <input checked="" type="checkbox"/>		Yes ___	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes ___	No <input checked="" type="checkbox"/>		Yes ___	No <input checked="" type="checkbox"/>

Remarks: Wet stream meadow/terrace adjacent to NHD stream. It is unseasonably dry this year - see WETS table for additional info.

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC	<u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC	<u>50%</u> (A/B)
4. _____				= Total Cover	
Shrub/Strub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of	Multiply by:
2. _____				OBL species <u>30</u>	x 1 = <u>30</u>
3. _____				FACW species <u>10</u>	x 2 = <u>20</u>
4. _____				FAC species <u>0</u>	x 3 = <u>0</u>
5. _____				FACU species <u>40</u>	x 4 = <u>160</u>
				UPL species <u>5</u>	x 5 = <u>25</u>
				Column Totals: <u>95</u> (A)	<u>235</u> (B) <u>235</u>
				Prevalence Index = B/A = <u>2.76</u>	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Camassia quamash</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Poa bulbosa</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	2 - Dominance Test is >50%	
3. <u>Eleocharis palustris</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 3 - Prevalence Index is >3.0 <sup>1</sup>	
4. <u>Luzula nuttallii</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Bromus tectorum</u>	<u>1</u>	<u>N</u>	<u>NL</u>	5 - Wetland Non-Vascular Plants <sup>1</sup>	
6. <u>Geranium carolinianum</u>	<u>25</u>	<u>Y</u>	<u>NL</u>	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____					
9. _____					
10. _____					
11. _____					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____				Yes <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

**SOIL**

Sampling Point: SP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>		
0-8	10YR 3/2	100					loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):  
 Type: Rock  
 Depth (inches): 8 inches by 5

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil is moist

ID:

MP:

Wetland F

## WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 2 City/County: Klickitat County Sampling Date: 5/1/20  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: SP-17  
 Investigator(s): R. Locke B. Wotata Section, Township, Range: S14N R1E  
 Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): Concave Slope (%): 10  
 Subregion (LRR): LRR B Lat: 45.8606 Long: -120.8685 Datum: NAD 1983  
 Soil Map Unit Name: 23A-Gunn stony loam, 8 to 30% slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation  Soil  or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation  Soil  or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: <u>Wet meadow adjacent to stream, It is unseasonably dry this year - see WETS table for additional info.</u>					

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____				= Total Cover	
= Total Cover				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: _____)				Total % Cover of:	Multiply by:
1. _____				OBL species <u>60</u>	x 1 = <u>60</u>
2. _____				FACW species <u>0</u>	x 2 = <u>0</u>
3. _____				FAC species <u>50</u>	x 3 = <u>150</u>
4. _____				FACU species <u>10</u>	x 4 = <u>40</u>
5. _____				UPL species <u>0</u>	x 5 = <u>0</u>
= Total Cover				Column Totals:	<u>120</u> (A) <u>250</u> (B)
= Total Cover				Prevalence Index = B/A = <u>2.08</u>	
Herb Stratum (Plot size: <u>5 feet</u> )				Hydrophytic Vegetation Indicators:	
1. <u>Eleocharis palustris</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2. <u>Holcus lanatus</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. <u>Festuca idahoensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	— Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Rumex crispus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____					
6. _____					
7. _____					
8. _____					
= Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. _____				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust _____			
Remarks:					

SOIL

Sampling Point: SP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-6	7.5 YR 3/1	75	5YR 3/4	25	C	M	loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> (Applicable to all LRRs, unless otherwise noted.)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: Rock  
 Depth (inches): 6 inches by S

Hydric Soil Present? Yes  No

Remarks:

HYDROLOGY

**Wetland Hydrology Indicators:**

<b>Primary Indicators</b> (minimum of one required; check all that apply)	<b>Secondary Indicators</b> (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil is moist

ID:

MP:

Wetland F

## WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Site 2 City/County: Klickitat County Sampling Date: 5/1/20  
 Applicant/Owner: Cypress Creek Renewables State: WAO Sampling Point: SP-18  
 Investigator(s): R. Kerbe, B. Wojtala Section, Township, Range: S14N R15E  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): flat Slope (%): 20  
 Subregion (LRR): LRR B Lat: 45.8607 Long: -120.8685 Datum: NAD 1983  
 Soil Map Unit Name: B3A - Gunn stony loam, 8 to 20% slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Upland soil pit is 10 feet above wetland soil pit. It is unseasonably dry this year - see WETS table for additional info.</u>		

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)	
4. _____				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: <u>5 feet</u> ) = Total Cover				Total % Cover of:	Multiply by:
1. _____				OBL species <u>0</u> x 1 = <u>0</u>	
2. _____				FACW species <u>0</u> x 2 = <u>0</u>	
3. _____				FAC species <u>30</u> x 3 = <u>90</u>	
4. _____				FACU species <u>5</u> x 4 = <u>20</u>	
5. _____				UPL species <u>20</u> x 5 = <u>100</u>	
Herb Stratum (Plot size: <u>5 feet</u> ) = Total Cover				Column Totals: <u>115</u> (A) <u>210</u> (B)	
1. <u>Holcus lanatus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.8</u>	
2. <u>Erodium cicutarium</u>	<u>30</u>	<u>Y</u>	<u>NL</u>		
3. <u>Lomatium nudicaule</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>		
4. <u>Achillea millefolium</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
5. _____					
6. _____					
7. _____					
8. _____					
Woody Vine Stratum (Plot size: _____) = Total Cover <u>85</u>				Hydrophytic Vegetation Indicators:	
1. _____				— Dominance Test is >50%	
2. _____				— Prevalence Index is ≤3.0 <sup>1</sup>	
				— Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

**SOIL**

Sampling Point SP-18

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100					Silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**  
 Type: Rock  
 Depth (inches): 6 inches bgs

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil is dry

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 4/15/24  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-Oa  
 Investigator(s): Summer Roberts Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): riverine depression Local relief (concave, convex, none): concave Slope (%): 6  
 Subregion (LRR): LRR B Lat: 45.841131 Long: -120.881444 Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>    </u>
Hydric Soil Present? Yes <u>X</u> No <u>    </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	

Remarks:  
 Riverine wetland, mostly stays within bed and banks but will seep out below bench occasionally.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____ 2. _____ 3. _____ 4. _____ =Total Cover	_____	_____	_____	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u> ) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ =Total Cover	_____	_____	_____	
<u>Herb Stratum</u> (Plot size: <u>5</u> ) 1. <u>Rumex salicifolius</u> <u>20</u> Yes <u>FACW</u> 2. <u>Camassia quamash</u> <u>30</u> Yes <u>FACW</u> 3. <u>Ribes aureum</u> <u>10</u> No <u>FAC</u> 4. <u>Salix scouleri</u> <u>10</u> No <u>FAC</u> 5. _____ 6. _____ 7. _____ 8. _____ <u>125</u> =Total Cover	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0 <sup>1</sup> ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: _____) 1. _____ 2. _____ =Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>

Remarks:

**SOIL**

Sampling Point: WT-106a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 2/1	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 4/15/24  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-Ob  
 Investigator(s): Summer Roberts Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.841132 Long: -120.881221 Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot.	

**VEGETATION – Use scientific names of plants.**

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	Notes
<b>Tree Stratum</b> (Plot size: <u>30</u> )					
1. <u>Crataegus douglasii</u>		<u>20</u>	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. <u>Salix scouleriana</u>		<u>10</u>	No	FAC	
3. _____					
4. _____					
=Total Cover					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					
1. <u>Symphoricarpos albus</u>		<u>60</u>	Yes	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of:                      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>100</u> (A) <u>410</u> (B) Prevalence Index = B/A = <u>4.10</u>
2. _____					
3. _____					
4. _____					
5. _____					
=Total Cover					
<b>Herb Stratum</b> (Plot size: <u>5</u> )					
1. <u>Anthriscus caucalis</u>		<u>60</u>	Yes	UPL	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Poa bulbosa</u>		<u>10</u>	No	FACU	
3. <u>Viola praemorsa</u>		<u>10</u>	No	UPL	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
=Total Cover					
<b>Woody Vine Stratum</b> (Plot size: <u>    </u> )					
1. _____					
2. _____					
=Total Cover					
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust <u>    </u>			

Remarks:

**SOIL**

Sampling Point: WT-106b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**U.S. Army Corps of Engineers**  
**WETLAND DETERMINATION DATA SHEET – Arid West Region**  
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending  
 Requirement Control Symbol EXEMPT:  
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 4/15/24  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-Pa  
 Investigator(s): Summer Roberts Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): Riverine depression Local relief (concave, convex, none): concave Slope (%): 6  
 Subregion (LRR): LRR B Lat: 45.838729 Long: --120.886668 Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: Riverine wetland, mostly stays within bed and banks but will seep out below bench occasionally.	

**VEGETATION – Use scientific names of plants.**

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				
1. <u>Salix scouleriana</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Crataegus douglasii</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	
3. _____				
4. _____				
		=Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. <u>Ribes aureum</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <u>Rumex salicifolius</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Camassia quamash</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
		<u>125</u>	=Total Cover	
<b>Woody Vine Stratum</b> (Plot size: <u>    </u> )				
1. _____				
2. _____				
		=Total Cover		
% Bare Ground in Herb Stratum <u>55</u>		% Cover of Biotic Crust <u>    </u>		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 30 x 1 = 30  
 FACW species 90 x 2 = 180  
 FAC species 5 x 3 = 15  
 FACU species 0 x 4 = 0  
 UPL species 0 x 5 = 0  
 Column Totals: 125 (A) 225 (B)  
 Prevalence Index = B/A = 1.80

**Hydrophytic Vegetation Indicators:**  
X Dominance Test is >50%  
X Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks:

**SOIL**

Sampling Point: WT-106a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	100					Loamy/Clayey	clay

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Rock restriction</u> Depth (inches): <u>12</u>	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Arid West Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-xxxx, Exp: Pending</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Carriger Solar City/County: Klickitat County Sampling Date: 4/15/24  
 Applicant/Owner: Cypress Creek Renewables State: WA Sampling Point: WT-Pb  
 Investigator(s): Summer Roberts Section, Township, Range: S12 T4N R15E  
 Landform (hillside, terrace, etc.): plateau Local relief (concave, convex, none): flat Slope (%): 4  
 Subregion (LRR): LRR B Lat: 45.838586 Long: --120.886676 Datum: NAD83  
 Soil Map Unit Name: Blockhouse silt loam, 0 to 5 percent slopes NWI classification: none  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: Upland plot.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus douglasii</u>	30	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____				
3. _____				
4. _____				
=Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15</u>)</b>				
1. <u>Symphoricarpos albus</u>	60	Yes	FACU	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>100</u> (A) <u>410</u> (B) Prevalence Index = B/A = <u>4.10</u>
2. _____				
3. _____				
4. _____				
5. _____				
=Total Cover				
<b>Herb Stratum (Plot size: <u>5</u>)</b>				
1. <u>Anthriscus caucalis</u>	60	Yes	UPL	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Poa bulbosa</u>	10	No	FACU	
3. <u>Viola praemorsa</u>	10	No	UPL	
4. <u>Hydrophyllum capitatum</u>	20	Yes	UPL	
5. _____				
6. _____				
7. _____				
8. _____				
=Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <u>    </u> No <u>X</u>
2. _____				
=Total Cover				
% Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust <u>    </u>				

Remarks:

**SOIL**

Sampling Point: WT-106b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/2	100					Loamy/Clayey	clay loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____    No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____    No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland name or number Wetland A

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: 4/29/10  
 Rated by Rachel Locke Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating \_\_\_\_\_ Wetland has multiple HGM classes?  Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

OVERALL WETLAND CATEGORY IV (based on functions \_\_\_ or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	<i>Circle the appropriate ratings</i>									
Site Potential	H	M	<u>L</u>	<u>H</u>	M	L	H	M	<u>L</u>	
Landscape Potential	H	<u>M</u>	L	H	<u>M</u>	L	H	M	<u>L</u>	
Value	<u>H</u>	M	L	H	M	<u>L</u>	H	M	<u>L</u>	TOTAL
Score Based on Ratings	6			6			3			15

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	II	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above	<input checked="" type="checkbox"/>	

Wetland name or number: \_\_\_\_\_

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
- At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),
- The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
- The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
- The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number Wetland A

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
<b>D 1.0. Does the site have the potential to improve water quality?</b>		
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland has no surface water outlet	points = 5	
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</b>		
YES = 3 NO = 0		
<b>D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</b>		
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
<b>Total for D 1</b>		<b>Add the points in the boxes above</b>

**Rating of Site Potential** If score is: 12- 16 = H 6- 11 = M 0- 5 = L

Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>D 2.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 No = 0	
<b>D 2.2. Is <math>&gt; 10\%</math> of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1 No = 0	
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1 No = 0	
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____</b>		
		Yes = 1 No = 0
<b>Total for D 2</b>		<b>Add the points in the boxes above</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L

Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?</b>		
		Yes = 1 No = 0
<b>D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?</b>		
		Yes = 1 No = 0
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?</b>		
		Yes = 2 No = 0
<b>Total for D 3</b>		<b>Add the points in the boxes above</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>DEPRESSIONAL WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 8	
Wetland has an intermittently flowing outlet	points = 4	
Wetland has a highly constricted permanently flowing outlet	points = 4	
Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 0	
D 4.2. <u>Depth of storage during wet periods:</u> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).		
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 8	
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	points = 6	
The wetland is a headwater wetland	points = 4	
Seasonal ponding: 1 ft - < 2 ft	points = 4	
Seasonal ponding: 6 in - < 1 ft	points = 2	
Seasonal ponding: < 6 in or wetland has only saturated soils	points = 0	
Total for D 4	Add the points in the boxes above	

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 No = 0	
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	
Total for D 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is: 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. <u>The wetland is in a landscape that has flooding problems.</u>		
Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND		
Flooding occurs in sub-basin that is immediately down-gradient of wetland	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.		
Explain why _____	points = 0	
There are no problems with flooding downstream of the wetland	points = 0	
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 No = 0	
Total for D 6	Add the points in the boxes above	

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number Wetland A

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality		
<b>R 1.0. Does the site have the potential to improve water quality?</b>		
<b>R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:</b>		
Depressions cover $> \frac{1}{3}$ area of wetland	points = 6	
Depressions cover $> \frac{1}{10}$ area of wetland	points = 3	
<input checked="" type="checkbox"/> Depressions present but cover $< \frac{1}{10}$ area of wetland	points = 1	
No depressions present	points = 0	1
<b>R 1.2. Structure of plants in the wetland (areas with <math>&gt;90\%</math> cover at person height; <b>not</b> Cowardin classes):</b>		
Forest or shrub $> \frac{2}{3}$ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland	points = 5	
<input checked="" type="checkbox"/> Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland	points = 2	2
Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  0-5 = L

Record the rating on the first page

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>R 2.1. Is the wetland within an incorporated city or within its UGA?</b>	Yes = 2 (No = 0)	0
<b>R 2.2. Does the contributing basin include a UGA or incorporated area?</b>	Yes = 1 (No = 0)	0
<b>R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?</b>	Yes = 1 (No = 0)	1
<b>R 2.4. Is <math>&gt; 10\%</math> of the area within 150 ft of wetland in land uses that generate pollutants</b>	Yes = 1 (No = 0)	1
<b>R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source</b>	Yes = 1 (No = 0)	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Landscape Potential** If score is: 3-6 = H  1 or 2 = M 0 = L

Record the rating on the first page

<b>R 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?</b>	Yes = 1 (No = 0)	0
<b>R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?</b>	Yes = 1 (No = 0)	1
<b>R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found.</b>	Yes = 2 (No = 0)	2
<b>Total for R 3</b>	<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Value** If score is:  2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)	
<b>Hydrologic Functions</b> - Indicators that site functions to reduce flooding and stream erosion			
<b>R 4.0. Does the site have the potential to reduce flooding and erosion?</b>			
<b>R 4.1. Characteristics of the overbank storage the wetland provides:</b> <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> $15 \text{ ft} / 2 \text{ ft} = 7.5$		<b>8</b>	
<input type="checkbox"/> If the ratio is more than 2 <input checked="" type="checkbox"/> If the ratio is 1-2 If the ratio is $\frac{1}{2}$ -<1 If the ratio is $\frac{1}{4}$ -< $\frac{1}{2}$ If the ratio is < $\frac{1}{4}$	points = 10 points = 8 points = 4 points = 2 points = 1		
<b>R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</b> <input checked="" type="checkbox"/> Forest or shrub for more than $\frac{2}{3}$ the area of the wetland <input checked="" type="checkbox"/> Forest or shrub for $>\frac{1}{3}$ area OR emergent plants $>\frac{2}{3}$ area Forest or shrub for $>\frac{1}{10}$ area OR emergent plants $>\frac{1}{3}$ area Plants do not meet above criteria			points = 6 points = 4 points = 2 points = 0
Total for R 5			<b>12</b>
Add the points in the boxes above			
<b>Rating of Site Potential</b> If score is: <input checked="" type="checkbox"/> 12-16 = H <input type="checkbox"/> 6-11 = M <input type="checkbox"/> 0-5 = L <span style="float: right;"><i>Record the rating on the first page</i></span>			

<b>R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	<b>0</b>
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	<b>0</b>
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	<b>1</b>
Total for R 5	Add the points in the boxes above	<b>1</b>
<b>Rating of Landscape Potential</b> If score is: <input type="checkbox"/> 3 = H <input checked="" type="checkbox"/> 1 or 2 = M <input type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

<b>R 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.</b> The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources Surface flooding problems are in a basin farther down-gradient No flooding problems anywhere downstream		points = 2 points = 1 points = 0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	<b>0</b>
Total for R 6	Add the points in the boxes above	<b>0</b>
<b>Rating of Value</b> If score is: <input type="checkbox"/> 2-4 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L <span style="float: right;"><i>Record the rating on the first page</i></span>		

Wetland name or number: \_\_\_\_\_

<b>LAKE FRINGE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality.		
L 1.0. Does the site have the potential to improve water quality?		
L 1.1. Average width of plants along the lakeshore (use polygons of Cowardin classes):		
Plants are more than 33 ft (10 m) wide	points = 6	
Plants are more than 16 ft (5 m) and < 33 ft (10 m) wide	points = 3	
Plants are more than 6 ft (2 m) and < 16 ft (5 m) wide	points = 1	
Plants are less than 6 ft wide	points = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. <i>These are not Cowardin classes. Area of cover is total cover in the wetland, but it can be in patches. Herbaceous does not include aquatic bed.</i>		
Cover of herbaceous plants is > 90% of the vegetated area	points = 6	
Cover of herbaceous plants is > $\frac{2}{3}$ of the vegetated area	points = 4	
Cover of herbaceous plants is > $\frac{1}{3}$ of the vegetated area	points = 3	
Other plants that are not aquatic bed > $\frac{2}{3}$ wetland	points = 3	
Other plants that are not aquatic bed in > $\frac{1}{3}$ vegetated area	points = 1	
Aquatic bed plants and open water cover > $\frac{2}{3}$ of the wetland	points = 0	
Total for L 1	Add the points in the boxes above	

**Rating of Site Potential** If score is:    8-12 = H    4-7 = M    0-3 = L

*Record the rating on the first page*

L 2.0. Does the landscape have the potential to support the water quality function of the site?		
L 2.1. Is the lake used by power boats?	Yes = 1 No = 0	
L 2.2. Is > 10% of the area within 150 ft of wetland on the upland side in land uses that generate pollutants?	Yes = 1 No = 0	
L 2.3. Does the lake have problems with algal blooms or excessive plants such as milfoil?	Yes = 1 No = 0	
Total for L 2	Add the points in the boxes above	

**Rating of Landscape Potential** If score is:    2 or 3 = H    1 = M    0 = L

*Record the rating on the first page*

L 3.0. Is the water quality improvement provided by the site valuable to society?		
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1 No = 0	
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)?	Yes = 1 No = 0	
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the lake or basin in which wetland is found.</i>	Yes = 2 No = 0	
Total for L 3	Add the points in the boxes above	

**Rating of Value** If score is:    2-4 = H    1 = M    0 = L

*Record the rating on the first page*

Wetland name or number \_\_\_\_\_

<b>LAKE FRINGE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the wetland unit functions to reduce shoreline erosion		
L 4.0. Does the site have the potential to reduce shoreline erosion?		
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore ( <b>do not</b> include Aquatic Bed): <i>Choose the highest scoring description that matches conditions in the wetland.</i>		
> ¼ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide		points = 6
> ¼ of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide		points = 4
> ¼ distance is Scrub-shrub or Forested at least 33 ft (10 m) wide		points = 4
Plants are at least 6 ft (2 m) wide (do not include Aquatic Bed)		points = 2
Plants are less than 6 ft (2 m) wide (do not include Aquatic Bed)		points = 0

**Rating of Site Potential** If score is:     6 = M     0-5 = L

Record the rating on the first page

L 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	
L 5.2. Is the fetch on the lake side of the wetland at least 1 mile in distance?	Yes = 1 No = 0	
Total for L 5	Add the points in the boxes above	

**Rating of Landscape Potential** If score is:     2 = H     1 = M     0 = L

Record the rating on the first page

L 6.0. Are the hydrologic functions provided by the site valuable to society?		
L 6.1. Are there resources, both human and natural, along the shore that can be impacted by erosion? If more than one resource is present, choose the one with the highest score.		
There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the wetland		points = 2
There are nature trails or other paths and recreational activities within 25 ft of OHWM		points = 1
Other resources that could be impacted by erosion		points = 1
There are no resources that can be impacted by erosion along the shores of the wetland		points = 0

**Rating of Value** If score is:     2 = H     1 = M     0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:



Wetland name or number \_\_\_\_\_

<b>SLOPE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions</b> - Indicators that the site functions to improve water quality		
<b>S 1.0. Does the site have the potential to improve water quality?</b>		
<b>S 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</b> Slope is 1% or less <span style="float: right;">points = 3</span> Slope is > 1% - 2% <span style="float: right;">points = 2</span> Slope is > 2% - 5% <span style="float: right;">points = 1</span> Slope is greater than 5% <span style="float: right;">points = 0</span>		
<b>S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorganic (use NRCS definitions):</b> Yes = 3 No = 0		
<b>S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:</b> Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (&gt;75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i> Dense, uncut, herbaceous plants > 90% of the wetland area <span style="float: right;">points = 6</span> Dense, uncut, herbaceous plants > ½ of area <span style="float: right;">points = 3</span> Dense, woody, plants > ½ of area <span style="float: right;">points = 2</span> Dense, uncut, herbaceous plants > ¼ of area <span style="float: right;">points = 1</span> Does not meet any of the criteria above for plants <span style="float: right;">points = 0</span>		
<b>Total for S 1</b> <span style="float: right;">Add the points in the boxes above</span>		

**Rating of Site Potential** If score is: 12 = H 6-11 = M 0-5 = L

Record the rating on the first page

<b>S 2.0. Does the landscape have the potential to support the water quality function at the site?</b>	
<b>S 2.1. Is &gt; 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?</b> <span style="float: right;">Yes = 1 No = 0</span>	
<b>S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?</b> Other sources _____ <span style="float: right;">Yes = 1 No = 0</span>	
<b>Total for S 2</b> <span style="float: right;">Add the points in the boxes above</span>	

**Rating of Landscape Potential** If score is: 1-2 = M 0 = L

Record the rating on the first page

<b>S 3.0. Is the water quality improvement provided by the site valuable to society?</b>	
<b>S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)?</b> <span style="float: right;">Yes = 1 No = 0</span>	
<b>S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list.</b> <span style="float: right;">Yes = 1 No = 0</span>	
<b>S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which wetland is found)?</b> <span style="float: right;">Yes = 2 No = 0</span>	
<b>Total for S 3</b> <span style="float: right;">Add the points in the boxes above</span>	

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number \_\_\_\_\_

<b>SLOPE WETLANDS</b>		Points (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion		
S 4.0. Does the site have the potential to reduce flooding and erosion?		
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i> Dense, uncut, <b>rigid</b> plants cover > 90% of the area of the wetland All other conditions		points = 1 points = 0

**Rating of Site Potential** If score is:    1 = M    0 = L

*Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff?		Yes = 1 No = 0

**Rating of Landscape Potential** If score is:    1 = M    0 = L

*Record the rating on the first page*







S 6.0. Are the hydrologic functions provided by the site valuable to society?		
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) Surface flooding problems are in a sub-basin farther down-gradient No flooding problems anywhere downstream		points = 2 points = 1 points = 0
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan?		Yes = 2 No = 0
Total for S 6		Add the points in the boxes above

**Rating of Value** If score is:    2-4 = H    1 = M    0 = L

*Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

Wetland name or number WetHard A

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS - Indicators that site functions to provide important habitat</b>		
<b>H 1.0. Does the wetland have the potential to provide habitat for many species?</b>		
<p><b>H 1.1. Structure of the plant community:</b>  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt; 40 in (&gt; 100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover) <span style="float: right;">4 or more checks: points = 3</span></p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover) <span style="float: right;">3 checks: points = 2</span></p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	<p>0</p>	
<b>H 1.2. Is one of the vegetation types Aquatic Bed?</b>		
Yes = 1 <b>No = 0</b>		0
<b>H 1.3. Surface water</b>		
<p><b>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands.</b> <span style="float: right;">Yes = 3 points &amp; go to H 1.4 No = go to H 1.3.2</span></p> <p><b>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? Answer yes only if H 1.3.1 is No.</b> <span style="float: right;">Yes = 2 No = 0</span></p>		
Yes = 2 No = 0		3
<b>H 1.4. Richness of plant species</b>		
<p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>4</u> <span style="float: right;">Scoring: &gt; 9 species: points = 2</span></p> <p style="text-align: right;"><del>4-9 species: points = 1</del></p> <p style="text-align: right;">&lt; 4 species: points = 0</p>		
# of species <u>4</u>		1
<b>H 1.5. Interspersion of habitats</b>		
<p>Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p>		
 <p>None = 0 points</p>	 <p>Low = 1 point</p>	 <p>Moderate = 2 points</p>
<p>All three diagrams in this row are <b>High = 3 points</b></p>		
		 <p>Riparian braided channels with 2 classes</p>
High = 3 points		0

Wetland name or number Wetland A

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>		
<input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		0
Total for H 1	Add the points in the boxes above	4
<b>Rating of Site Potential</b> If score is: <u>15-18 = H</u> <u>7-14 = M</u> <input checked="" type="checkbox"/> <u>0-6 = L</u> Record the rating on the first page		

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate: % undisturbed habitat</i> <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> % > 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span> 20-33% of 1km Polygon <span style="float: right;">points = 2</span> 10-19% of 1km Polygon <span style="float: right;">points = 1</span> <10% of 1km Polygon <span style="float: right;">points = 0</span>		1
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate: % undisturbed habitat</i> <u>    </u> + [(% moderate and low intensity land uses)/2] <u>    </u> = <u>    </u> % Undisturbed habitat > 50% of Polygon <span style="float: right;">points = 3</span> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span> Undisturbed habitat 10 - 50% and > 3 patches <span style="float: right;">points = 1</span> Undisturbed habitat < 10% of Polygon <span style="float: right;">points = 0</span>		0
<b>H 2.3. Land use intensity in 1 km Polygon:</b> > 50% of Polygon is high intensity land use <span style="float: right;">points = (-2)</span> Does not meet criterion above <span style="float: right;">points = 0</span>		-2
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b> Yes = 3 (No = 0)		0
Total for H 2	Add the points in the boxes above	-1
<b>Rating of Landscape Potential</b> If score is: <u>4-9 = H</u> <u>1-3 = M</u> <input checked="" type="checkbox"/> <u>&lt; 1 = L</u> Record the rating on the first page		

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b> Site meets ANY of the following criteria: <span style="float: right;">points = 2</span> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span> Site does not meet any of the criteria above. <span style="float: right;">points = 0</span>		0
<b>Rating of Value</b> If score is: <u>2 = H</u> <u>1 = M</u> <input checked="" type="checkbox"/> <u>0 = L</u> Record the rating on the first page		

Wetland name or number \_\_\_\_\_

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

*Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.*

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p> <p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b> No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{1}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b> No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

Wetland name or number \_\_\_\_\_

<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i> Yes – Go to SC 4.3 No – Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 4.3 No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = <b>Category I bog</b> No – Go to SC 4.4 <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = <b>Category I bog</b> No – Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b> Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i></li> </ul> <p>Yes – Go to SC 5.1 No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)</i>? Yes = <b>Category I</b> No – Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = <b>Category I</b> No – Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)</i>? Yes = <b>Category II</b> No – Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b> <i>Choose the highest rating if wetland falls into several categories</i> If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE: This question is independent of the land use between the wetland and the priority habitat.**

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report)
- **Old-growth/Mature forests:** **Old-growth east of Cascade crest** – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests** – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number B

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland B Date of site visit: 4/29/20

Rated by Rachel Locke Trained by Ecology?  Yes  No Date of training \_\_\_\_\_

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
Source of base aerial photo/map \_\_\_\_\_

OVERALL WETLAND CATEGORY IV (based on functions X or special characteristics   )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality		Hydrologic		Habitat				
<i>Circle the appropriate ratings</i>									
Site Potential	H	(M)	L	H	(M)	L	H	M	(L)
Landscape Potential	H	(M)	L	H	(M)	L	H	M	(L)
Value	H	M	(L)	H	(M)	L	H	M	(L)
Score Based on Ratings	<del>5</del> 6		6		3		<del>1</del> 15		

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	II	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above	<input checked="" type="checkbox"/>	



Wetland name or number

B

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.  
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?  
 The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?  
 The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?  
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number B

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number B

**DEPRESSIONAL WETLANDS**

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

<b>D 1.0. Does the site have the potential to improve water quality?</b>		
<b>D 1.1. Characteristics of surface water outflows from the wetland:</b>		
Wetland has no surface water outlet	points = 5	<b>3</b>
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
<b>D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</b>	YES = 3 / NO = 0	<b>0</b>
<b>D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</b>		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	<b>3</b>
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed, vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
<b>D 1.4. Characteristics of seasonal ponding or inundation:</b>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	<b>1</b>
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
<b>Total for D 1</b>	<b>Add the points in the boxes above</b>	<b>7</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

<b>D 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>D 2.1. Does the wetland receive stormwater discharges?</b>	Yes = 1 / No = 0	<b>1</b>
<b>D 2.2. Is &gt; 10% of the area within 150 ft of the wetland in land uses that generate pollutants?</b>	Yes = 1 / No = 0	<b>1</b>
<b>D 2.3. Are there septic systems within 250 ft of the wetland?</b>	Yes = 1 / No = 0	<b>0</b>
<b>D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____</b>	Yes = 1 / No = 0	<b>0</b>
<b>Total for D 2</b>	<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Landscape Potential** If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

<b>D 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?</b>	Yes = 1 / No = 0	<b>0</b>
<b>D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?</b>	Yes = 1 / No = 0	<b>0</b>
<b>D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?</b>	Yes = 2 / No = 0	<b>2</b>
<b>Total for D 3</b>	<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

Wetland name or number B

**DEPRESSIONAL WETLANDS**

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

Points  
(only 1 score  
per box)

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconfined surface outlet (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")	points = 8 points = 4 points = 4 points = 0	4
D 4.2. Depth of storage during wet periods; Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 points = 6 points = 4 points = 4 points = 2 points = 0	2
Total for D 4	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 12-16 = H  6-11 = M  0-5 = L Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	Yes = 1 (No = 0)	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	2

**Rating of Landscape Potential** If score is: 3 = H  1 or 2 = M  0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ There are no problems with flooding downstream of the wetland	points = 2 points = 1 points = 0 points = 0	1
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 (No = 0)	0
Total for D 6	Add the points in the boxes above	1

**Rating of Value** If score is: 2-4 = H  1 = M  0 = L Record the rating on the first page

Wetland name or number B

These questions apply to wetlands of all HGM classes.

(only 1 score per box)

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat

H 1.0. Does the wetland have the potential to provide habitat for many species?

H 1.1. Structure of the plant community:

Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is  $\geq \frac{1}{4}$  ac or  $\geq 10\%$  of the wetland if wetland is  $< 2.5$  ac.

Aquatic bed

Emergent plants 0-12 in (0-30 cm) high are the highest layer and have  $> 30\%$  cover

Emergent plants  $> 12-40$  in ( $> 30-100$  cm) high are the highest layer with  $> 30\%$  cover

Emergent plants  $> 40$  in ( $> 100$  cm) high are the highest layer with  $> 30\%$  cover

Scrub-shrub (areas where shrubs have  $> 30\%$  cover)

4 or more checks: points = 3

Forested (areas where trees have  $> 30\%$  cover)

3 checks: points = 2

2 checks: points = 1

1 check: points = 0

0

H 1.2. Is one of the vegetation types Aquatic Bed?

Yes = 1 No = 0

0

H 1.3. Surface water

H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least  $\frac{1}{4}$  ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 No = go to H 1.3.2

H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least  $\frac{1}{4}$  ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0

0

H 1.4. Richness of plant species

Count the number of plant species in the wetland that cover at least  $10 \text{ ft}^2$ . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.

Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)

# of species 2

Scoring:  $> 9$  species: points = 2

4-9 species: points = 1

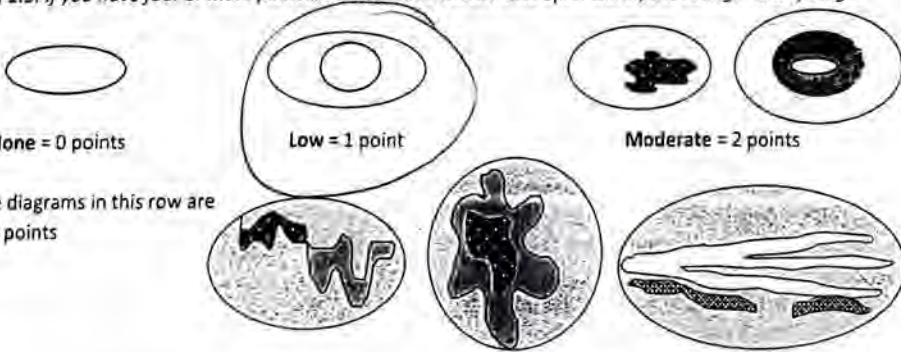
$\leq 4$  species: points = 0

0

H 1.5. Interspersion of habitats

Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.

Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points

Low = 1 point

Moderate = 2 points

All three diagrams in this row are High = 3 points

Riparian braided channels with 2 classes

Figure 1

Wetland name or number B

<p><b>H 1.6. Special habitat features</b>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.</p> <p><input type="checkbox"/> Cattails or bulrushes are present within the wetland.</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.</p> <p><input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity</p> <p><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
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Total for H 1 Add the points in the boxes above 1

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M  0-6 = L Record the rating on the first page

<p><b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b></p> <p><b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b>  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %</i></p> <p>&gt; 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span></p> <p>20-33% of 1km Polygon <span style="float: right;">points = 2</span></p> <p>10-19% of 1km Polygon <span style="float: right;">points = 1</span></p> <p>&lt;10% of 1km Polygon <span style="float: right;">points = 0</span></p> <p><b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b>  <i>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %</i></p> <p>Undisturbed habitat &gt; 50% of Polygon <span style="float: right;">points = 3</span></p> <p>Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span></p> <p>Undisturbed habitat 10 - 50% and &gt; 3 patches <span style="float: right;">points = 1</span></p> <p>Undisturbed habitat &lt; 10% of Polygon <span style="float: right;">points = 0</span></p> <p><b>H 2.3. Land use intensity in 1 km Polygon:</b></p> <p>&gt; 50% of Polygon is high intensity land use <span style="float: right;">points = (-2)</span></p> <p>Does not meet criterion above <span style="float: right;">points = 0</span></p> <p><b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>  <span style="float: right;">Yes = 3 No = 0</span></p> <p>Total for H 2 <span style="float: right;">Add the points in the boxes above</span> <span style="float: right;">-1</span></p>	1
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**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M  < 1 = L Record the rating on the first page

<p><b>H 3.0. Is the habitat provided by the site valuable to society?</b></p> <p><b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b></p> <p>Site meets ANY of the following criteria: <span style="float: right;">points = 2</span></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</li> </ul> <p>Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span></p> <p>Site does not meet any of the criteria above <span style="float: right;">points = 0</span></p>	0
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**Rating of Value** If score is: 2 = H 1 = M  0 = L Record the rating on the first page

Wetland name or number

B

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b> Is the wetland less than 4000 ft<sup>2</sup>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to SC 1.1    <input checked="" type="radio"/> No = Not a vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to SC 1.2    <input checked="" type="radio"/> No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II    <input checked="" type="radio"/> No = Category III</p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b> Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{1}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = Category I    <input checked="" type="radio"/> No = Not an alkali wetland</p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b> SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 3.2    <input checked="" type="radio"/> No – Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I    <input checked="" type="radio"/> No = Not a WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – Contact WNHP/WDNR and go to SC 3.4    <input checked="" type="radio"/> No = Not a WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = Category I    <input checked="" type="radio"/> No = Not a WHCV</p>	Cat. I



<b>SC 4.0 Bogs and Calcareous Fens</b>	
<p>Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p>	
<p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i></p>	
<p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p>	
<p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?</p> <p><b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p>	
<p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?</p>	Cat. I
<p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?</p>	
<p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:</p>	
<ul style="list-style-type: none"> <li>— Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems</li> <li>— The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 µS/cm at multiple locations within the wetland</li> </ul>	Cat. I
<b>SC 5.0. Forested Wetlands</b>	
<p>Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i></li> </ul>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)</i>?</p>	Cat. I
<p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?</p>	Cat. I
<p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)</i>?</p>	Cat. II
<p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?</p>	Cat. II
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>  <i>If you answered No for all types, enter "Not Applicable" on Summary Form</i></p>	Not Applicable

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE: This question is independent of the land use between the wetland and the priority habitat.**

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number Wetland C

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland C Date of site visit: 4/30/20  
 Rated by Rachel Locke Trained by Ecology? Yes  No  Date of training \_\_\_\_\_

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

OVERALL WETLAND CATEGORY IV (based on functions \_\_\_ or special characteristics \_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_ Category I – Total score = 22-27
- \_\_\_ Category II – Total score = 19-21
- \_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<u>L</u>	H	<u>M</u>	L	H	M	<u>L</u>	
Landscape Potential	H	<u>M</u>	L	H	<u>M</u>	L	H	M	<u>L</u>	
Value	<u>H</u>	M	L	H	M	<u>L</u>	H	M	<u>L</u>	TOTAL
Score Based on Ratings	<u>0</u>			<u>5</u>			<u>3</u>			<u>14</u>

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<u>II</u>	III
Alkali		I
Wetland of High Conservation Value		I
Bog and Calcareous Fens		I
Old Growth or Mature Forest – slow growing		I
Aspen Forest		I
Old Growth or Mature Forest – fast growing		II
Floodplain forest		II
None of the above		<input checked="" type="checkbox"/>

Wetland name or number C

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO** - go to 2

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

- The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO** - go to 3

**YES** - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO** - go to 4

**YES** - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO** - go to 5

**YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number C

**DEPRESSIONAL WETLANDS**

Points  
(only 1  
score per  
box)

Water Quality Functions: - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet
- Wetland has an intermittently flowing outlet
- Wetland has a highly constricted permanently flowing outlet
- Wetland has a permanently flowing, unconstricted, surface outlet

points = 5  
points = 3  
points = 2  
points = 1

1

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)

YES = 3 NO = 0

0

D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)

- Wetland has persistent, ungrazed, vegetation for  $> \frac{2}{3}$  of area
- Wetland has persistent, ungrazed, vegetation from  $\frac{1}{3}$  to  $\frac{2}{3}$  of area
- Wetland has persistent, ungrazed vegetation from  $\frac{1}{10}$  to  $< \frac{1}{3}$  of area
- Wetland has persistent, ungrazed vegetation  $< \frac{1}{10}$  of area

points = 5  
points = 3  
points = 1  
points = 0

3

D 1.4. Characteristics of seasonal ponding or inundation:

- This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.*
- Area seasonally ponded is  $> \frac{1}{2}$  total area of wetland
- Area seasonally ponded is  $\frac{1}{4}$  -  $\frac{1}{2}$  total area of wetland
- Area seasonally ponded is  $< \frac{1}{4}$  total area of wetland

points = 3  
points = 1  
points = 0

1

Total for D 1

Add the points in the boxes above

5

Rating of Site Potential If score is: 12-16 = H 6-11 = M  0-5 = L

Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 2.2. Is  $> 10\%$  of the area within 150 ft of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

1

D 2.3. Are there septic systems within 250 ft of the wetland?

Yes = 1 No = 0

0

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions

D 2.1- D 2.3? Source

Yes = 1 No = 0

0

Total for D 2

Add the points in the boxes above

1

Rating of Landscape Potential If score is: 3 or 4 = H  1 or 2 = M 0 = L

Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?

Yes = 1 No = 0

0

D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list eutrophic lakes, problems with nuisance and toxic algae]?

Yes = 1 No = 0

0

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?

Yes = 2 No = 0

2

Total for D 3

Add the points in the boxes above

2

Rating of Value If score is:  2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number 0

<b>DEPRESSIONAL WETLANDS</b>		Points: (only 1 score per box)
<b>Hydrologic Functions</b> - Indicators that the site functions to reduce flooding and erosion.		
<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b> Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i>		points = 8 <u>points = 4</u> points = 4 points = 0  4
<b>D 4.2. Depth of storage during wet periods:</b> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry). Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland <u>Seasonal ponding: 1 ft - &lt; 2 ft</u> Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils		points = 8 points = 6 points = 4 <u>points = 4</u> points = 2 points = 0  4
Total for D 4		Add the points in the boxes above <b>8</b>
<b>Rating of Site Potential</b> If score is: <u>12-16 = H</u> <input checked="" type="checkbox"/> <u>6-11 = M</u> <input type="checkbox"/> <u>0-5 = L</u> <input type="checkbox"/> Record the rating on the first page		

<b>D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?</b>		
D 5.1. Does the wetland receive stormwater discharges?		Yes = 1 No = 0 <input type="radio"/>
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?		<u>Yes = 1</u> No = 0 <input type="radio"/>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		<u>Yes = 1</u> No = 0 <input type="radio"/>
Total for D 5		Add the points in the boxes above <b>2</b>
<b>Rating of Landscape Potential</b> If score is: <u>3 = H</u> <input checked="" type="checkbox"/> <u>1 or 2 = M</u> <input type="checkbox"/> <u>0 = L</u> <input type="checkbox"/> Record the rating on the first page		

<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The wetland is in a landscape that has flooding problems.</b> Choose the description that best matches conditions around the wetland being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ There are no problems with flooding downstream of the wetland		
		points = 2 points = 1  points = 0 <u>points = 0</u>  0
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?		Yes = 2 No = 0 <input type="radio"/>
Total for D 6		Add the points in the boxes above <b>0</b>
<b>Rating of Value</b> If score is: <u>2-4 = H</u> <input type="checkbox"/> <u>1 = M</u> <input checked="" type="checkbox"/> <u>0 = L</u> <input type="checkbox"/> Record the rating on the first page		



Wetland name or number C

**These questions apply to wetlands of all HGM classes.**

**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat (only 1 score per box)

H 1.0. Does the wetland have the potential to provide habitat for many species?

H 1.1. Structure of the plant community:  
 Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is  $\geq \frac{1}{4}$  ac or  $\geq 10\%$  of the wetland if wetland is  $< 2.5$  ac.

- Aquatic bed
- Emergent plants 0-12 in (0-30 cm) high are the highest layer and have  $> 30\%$  cover
- Emergent plants >12-40 in ( $> 30$ -100 cm) high are the highest layer with  $> 30\%$  cover
- Emergent plants  $> 40$  in ( $> 100$  cm) high are the highest layer with  $> 30\%$  cover
- Scrub-shrub (areas where shrubs have  $> 30\%$  cover) 4 or more checks: points = 3
- Forested (areas where trees have  $> 30\%$  cover) 3 checks: points = 2


~~2 checks: points = 1~~  
~~1 check: points = 0~~

H 1.2. Is one of the vegetation types Aquatic Bed?  
 Yes = 1 No = 0 1  
0

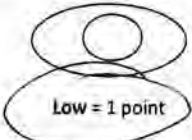
H 1.3. Surface water  
 H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least  $\frac{1}{4}$  ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands.  
 Yes = 3 points & go to H 1.4 No = go to H 1.3.2  
 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least  $\frac{1}{4}$  ac or 10% of its area? Answer yes only if H 1.3.1 is No.  
 Yes = 3 No = 0 3

H 1.4. Richness of plant species  
 Count the number of plant species in the wetland that cover at least  $10 \text{ ft}^2$ . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.  
 Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)  
 # of species 2  
 Scoring:  $> 9$  species: points = 2  
 4-9 species: points = 1  
 $< 4$  species: points = 0 0


H 1.5. Interspersion of habitats  
 Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.  
 Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points



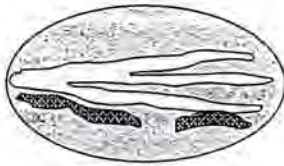


Low = 1 point



Moderate = 2 points

All three diagrams in this row are High = 3 points

Riparian braided channels with 2 classes 1

Wetland name or number C

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		0
Total for H 1 <span style="float: right;">Add the points in the boxes above</span>		5
<b>Rating of Site Potential</b> If score is: <u>15-18 = H</u> <u>7-14 = M</u> <u>0-6 = L</u> <span style="float: right;"><i>Record the rating on the first page</i></span>		

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate: % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %</i> > 1/3 (33.3%) of 1 km Polygon <span style="float: right;">points = 3</span> 20-33% of 1km Polygon <span style="float: right;">points = 2</span> 10-19% of 1km Polygon <span style="float: right;">points = 1</span> <10% of 1km Polygon <span style="float: right;">points = 0</span>		1
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate: % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %</i> Undisturbed habitat > 50% of Polygon <span style="float: right;">points = 3</span> Undisturbed habitat 10 - 50% and in 1-3 patches <span style="float: right;">points = 2</span> Undisturbed habitat 10 - 50% and > 3 patches <span style="float: right;">points = 1</span> Undisturbed habitat < 10% of Polygon <span style="float: right;">points = 0</span>		0
<b>H 2.3. Land use intensity in 1 km Polygon:</b> > 50% of Polygon is high intensity land use <span style="float: right;">points = (-2)</span> Does not meet criterion above <span style="float: right;">points = 0</span>		-2
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b> Yes = 3 No = 0		0
Total for H 2 <span style="float: right;">Add the points in the boxes above</span>		-1
<b>Rating of Landscape Potential</b> If score is: <u>4-9 = H</u> <u>1-3 = M</u> <u>0 = L</u> <span style="float: right;"><i>Record the rating on the first page</i></span>		

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b> Site meets ANY of the following criteria: <span style="float: right;">points = 2</span> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) <span style="float: right;">points = 1</span> Site does not meet any of the criteria above <span style="float: right;">points = 0</span>		0
<b>Rating of Value</b> If score is: <u>2 = H</u> <u>1 = M</u> <u>0 = L</u> <span style="float: right;"><i>Record the rating on the first page</i></span>		

Wetland name or number \_\_\_\_\_

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow (&lt; 1 ft (30 cm) deep) and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right; font-size: small;">Yes – Go to SC 1.1 No = Not a vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right; font-size: small;">Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics</span></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right; font-size: small;">Yes = Category II No = Category III</span></p>	<p>Cat. II Cat. III</p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than ¼ of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right; font-size: small;">Yes = Category I No = Not an alkali wetland</p>	<p>Cat. I</p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right; font-size: small;">Yes – Go to SC 3.2 <b>No</b> – Go to SC 3.3</span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right; font-size: small;">Yes = Category I <b>No</b> = Not a WHCV</span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf</a>  <span style="float: right; font-size: small;">Yes – Contact WNHP/WDNR and go to SC 3.4 <b>No</b> = Not a WHCV</span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right; font-size: small;">Yes = Category I <b>No</b> = Not a WHCV</span></p>	<p>Cat. I</p>

Wetland name or number C

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to SC 4.3 No – Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to SC 4.3 No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = Category I bog No – Go to SC 4.4  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = Category I bog No – Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = Is a Category I calcareous fen No = Is not a calcareous fen</p>	<p>Cat. I</p> <p>Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i></li> </ul> <p>Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics</p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)</i>?          Yes = Category I No – Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = Category I No – Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)</i>?          Yes = Category II No – Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = Category II No = Not a forested wetland with special characteristics</p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>          Choose the highest rating if wetland falls into several categories          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** This question is independent of the land use between the wetland and the priority habitat.

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- **Old-growth/Mature forests:** **Old-growth east of Cascade crest** – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests** – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update

Effective January 1, 2015

Appendix B

Wetland name or number D

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland D Date of site visit: 4/30/20  
 Rated by Rachel Locke Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class used for rating Slope Wetland has multiple HGM classes? Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

OVERALL WETLAND CATEGORY IV (based on functions X or special characteristics   )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	L	H	M	L	H	M	L	
Landscape Potential	H	M	L	H	M	L	H	M	L	
Value	H	M	L	H	M	L	H	M	L	TOTAL
Score Based on Ratings	7			5			3			15

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	II	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above	<input checked="" type="checkbox"/>	

Wetland name or number D

### Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

### Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

### Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

# HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.  
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?  
 The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2 YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?  
 The wetland is on a slope (*slope can be very gradual*).  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3 YES - The wetland class is **Slope**  
**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?  
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4 YES - The wetland class is **Riverine**  
**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5 YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.



Wetland name or number D

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number D

### SLOPE WETLANDS

Points  
(only 1  
score per  
box)

**Water Quality Functions** – Indicators that the site functions to improve water quality

**S 1.0. Does the site have the potential to improve water quality?**

**S 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)**

Slope is 1% or less points = 3

Slope is > 1% - 2% points = 2

Slope is > 2% - 5% points = 1

Slope is greater than 5% points = 0

1

**S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorganic (use NRCS definitions):** Yes = 3 No = 0

0

**S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:**

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

- Dense, uncut, herbaceous plants > 90% of the wetland area
- Dense, uncut, herbaceous plants > ¼ of area
- Dense, woody, plants > ½ of area
- Dense, uncut, herbaceous plants > ¼ of area
- Does not meet any of the criteria above for plants

points = 6  
points = 3  
points = 2  
points = 1  
points = 0

6

Total for S 1

Add the points in the boxes above

7

**Rating of Site Potential** If score is: 12 = H 6-11 = M 0-5 = L

Record the rating on the first page

**S 2.0. Does the landscape have the potential to support the water quality function at the site?**

**S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants?**

Yes = 1 No = 0

1

**S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?**

Other sources

Yes = 1 No = 0

0

Total for S 2

Add the points in the boxes above

1

**Rating of Landscape Potential** If score is: 1-2 = M 0 = L

Record the rating on the first page

**S 3.0. Is the water quality improvement provided by the site valuable to society?**

**S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)?**

Yes = 1 No = 0

0

**S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list.**

Yes = 1 No = 0

0

**S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which wetland is found)?**

Yes = 2 No = 0

2

Total for S 3

Add the points in the boxes above

2

**Rating of Value** If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number 0

<b>SLOPE WETLANDS</b>	Points (only 1 score per box)
-----------------------	--

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion

S 4.0. Does the site have the potential to reduce flooding and erosion?

<p>S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually &gt; 1/8 in), or dense enough, to remain erect during surface flows.</i>                  Dense, uncut, rigid plants cover &gt; 90% of the area of the wetland                  All other conditions</p>	points = 1 points = 0
--	--------------------------

**Rating of Site Potential** If score is:  1 = M  0 = L Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

<p>S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff?</p>	Yes = 1 No = 0
---	----------------

**Rating of Landscape Potential** If score is:  1 = M  0 = L Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

<p>S 6.1. Distance to the nearest areas downstream that have flooding problems:                  The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)                  Surface flooding problems are in a sub-basin farther down-gradient                  No flooding problems anywhere downstream</p>	points = 2 points = 1 points = 0
---	--

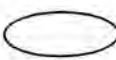
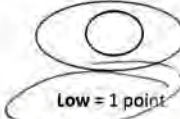
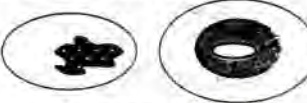



<p>S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan?</p>	Yes = 2 No = 0
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<p>Total for S 6</p>	Add the points in the boxes above	0
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**Rating of Value** If score is:  2-4 = H  1 = M  0 = L Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number D

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is $< 2.5$ ac. <input checked="" type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Emergent plants $> 40$ in ( $> 100$ cm) high are the highest layer with $> 30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $> 30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $> 30\%$ cover)		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0 1
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0 0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 (No = go to H 1.3.2) H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0		3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>5</u>		Scoring: $> 9$ species: points = 2 4-9 species: points = 1 $< 4$ species: points = 0 1
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.		Figure
 None = 0 points  Low = 1 point  Moderate = 2 points All three diagrams in this row are High = 3 points    Riparian braided channels with 2 classes		1

Wetland name or number: D

<b>H 1.6. Special habitat features</b> Check the habitat features that are present in the wetland. The number of checks is the number of points. <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		0 6
Total for H 1	Add the points in the boxes above	6

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M  0-6 = L Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> Calculate: % undisturbed habitat ____ + [(% moderate and low intensity land uses)/2] ____ = ____ % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0		1
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> Calculate: % undisturbed habitat ____ + [(% moderate and low intensity land uses)/2] ____ = ____ % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0		0
<b>H 2.3. Land use intensity in 1 km Polygon:</b> > 50% of Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		-2
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b> Yes = 3 No = 0		0
Total for H 2	Add the points in the boxes above	-1

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M  <1 = L Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b> Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0		0

**Rating of Value** If score is: 2 = H 1 = M  0 = L Record the rating on the first page

## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife 2008, Priority Habitat and Species List Olympia, Washington, 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf>) or access the list from here. <http://wdfw.wa.gov/conservation/plu/106/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland. **NOTE:** This question is independent of the land use between the wetland and the priority habitat.

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- **Old-growth/Mature forests:** **Old-growth east of Cascade crest** – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests** – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, etc., or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including rmpap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savanna:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update

Effective January 1, 2015

Appendix B

Wetland name or number E

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland E Date of site visit: 4/30/20  
 Rated by Rachel Locke Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Depositional Wetland has multiple HGM classes?  Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY**    (based on functions    or special characteristics   )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

**Score for each function based on three ratings (order of ratings is not important)**

9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <b>L</b>	<b>H</b> M L	H M <b>L</b>	
Landscape Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Value	<b>H</b> M L	H M <b>L</b>	H M <b>L</b>	<b>TOTAL</b>
Score Based on Ratings	<b>6</b>	<b>6</b>	<b>3</b>	<b>15</b>

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
Vernal Pools	<b>II</b> III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	<input checked="" type="checkbox"/>

Wetland name or number \_\_\_\_\_

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



# HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.  
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?  
 The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO** - go to 2 **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?  
 The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3 **YES** - The wetland class is **Slope**  
**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?  
 The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4 **YES** - The wetland class is **Riverine**  
**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5 ~~NO~~ The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number E

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number E

**RIVERINE WETLANDS**

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points (only 1 score per box)

<b>R 1.0. Does the site have the potential to improve water quality?</b>		
<b>R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event.</b>		
Depressions cover > 1/3 area of wetland	points = 6	
Depressions cover > 1/10 area of wetland	points = 3	
Depressions present but cover < 1/10 area of wetland	points = 1	
No depressions present	points = 0	0
<b>R 1.2. Structure of plants in the wetland (areas with &gt;90% cover at person height, not Cowardin classes):</b>		
Forest or shrub > 2/3 the area of the wetland	points = 10	
Forest or shrub 1/3 - 2/3 area of the wetland	points = 5	
Ungrazed, herbaceous plants > 2/3 area of wetland	points = 5	
Ungrazed herbaceous plants 1/3 - 2/3 area of wetland	points = 2	2
Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland	points = 0	
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	2

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  0-5 = L Record the rating on the first page

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
<b>R 2.1. Is the wetland within an incorporated city or within its UGA?</b>	Yes = 2 No = 0	0
<b>R 2.2. Does the contributing basin include a UGA or incorporated area?</b>	Yes = 1 No = 0	0
<b>R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?</b>	Yes = 1 No = 0	1
<b>R 2.4. Is &gt; 10% of the area within 150 ft of wetland in land uses that generate pollutants?</b>	Yes = 1 No = 0	1
<b>R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source _____</b>	Yes = 1 No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	2

**Rating of Landscape Potential** If score is: 3-6 = H  1 or 2 = M 0 = L Record the rating on the first page

<b>R 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
<b>R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?</b>	Yes = 1 No = 0	0
<b>R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?</b>	Yes = 1 No = 0	0
<b>R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found.</b>	Yes = 2 No = 0	2
<b>Total for R 3</b>	<b>Add the points in the boxes above</b>	2

**Rating of Value** If score is:  2-4 = H 1 = M 0 = L Record the rating on the first page

Wetland name or number E

**RIVERINE WETLANDS**

Points =  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).</i> If the ratio is more than 2 If the ratio is 1-2 If the ratio is 1/2-1 If the ratio is 1/4-1/2 If the ratio is < 1/4	points = 10 points = 8 points = 4 points = 2 points = 1	0
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).</i> Forest or shrub for more than 2/3 the area of the wetland Forest or shrub for > 1/3 area OR emergent plants > 2/3 area Forest or shrub for > 1/10 area OR emergent plants > 1/3 area Plants do not meet above criteria	points = 6 points = 4 points = 2 points = 0	4
Total for R 5	Add the points in the boxes above	12

**Rating of Site Potential** If score is:  12-16 = H  6-11 = M  0-5 = L Record the rating on the first page

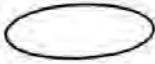






R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	0
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	0
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	1
Total for R 5	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is:  3 = H  1 or 2 = M  0 = L Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?		
R 6.1. Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i> The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources Surface flooding problems are in a basin farther down-gradient No flooding problems anywhere downstream	points = 2 points = 1 points = 0	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	0

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L Record the rating on the first page

Wetland name or number E

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is $< 2.5$ ac. <input checked="" type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input checked="" type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants > 40 in (> 100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $>30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $>30\%$ cover)		4 or more checks: points = 3 3 checks: points = 2 <input checked="" type="checkbox"/> 2 checks: points = 1 <input type="checkbox"/> 1 check: points = 0 Yes = 1 <input checked="" type="checkbox"/> No = 0
H 1.2. Is one of the vegetation types Aquatic Bed?		0
H 1.3. <u>Surface water</u> H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 <input checked="" type="checkbox"/> No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 <input checked="" type="checkbox"/> No = 0		3
H 1.4. <u>Richness of plant species</u> Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>3</u>		Scoring: $> 9$ species: points = 2 4-9 species: points = 1 <input checked="" type="checkbox"/> $< 4$ species: points = 0
H 1.5. <u>Interspersion of habitats</u> Decide from the diagrams below whether interspersions among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.		Figure
 <p>None = 0 points</p>  <p>Low = 1 point</p>  <p>Moderate = 2 points</p> 		1
<p>All three diagrams in this row are High = 3 points</p>    <p>Riparian braided channels with 2 classes</p>		

<b>H 1.6. Special habitat features</b> <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i> <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. <input type="checkbox"/> Cattails or bulrushes are present within the wetland. <input type="checkbox"/> Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded. <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation ( <i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i> )		0
Total for H 1	Add the points in the boxes above	5

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M  0-6 = L Record the rating on the first page

<b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b>		
<b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b> <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ % > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0		1
<b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b> <i>Calculate:</i> % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of Polygon points = 0		0
<b>H 2.3. Land use intensity in 1 km Polygon:</b> > 50% of Polygon is high intensity land use points = (-2) Does not meet criterion above points = 0		-2
<b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b> Yes = 3 No = 0		0
Total for H 2	Add the points in the boxes above	-1

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M  < 1 = L Record the rating on the first page

<b>H 3.0. Is the habitat provided by the site valuable to society?</b>		
<b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b> Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0		0

**Rating of Value** If score is: 2 = H 1 = M  0 = L Record the rating on the first page

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category
<p><b>SC 1.0 Vernal pools</b></p> <p>Is the wetland less than 4000 ft<sup>2</sup> and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>- Its only source of water is rainfall or overland flow from a small contributing basin and has no groundwater input</li> <li>- Wetland plants are typically present only in the spring; the summer vegetation is typically upland grasses. If you find persistent submersed wetland plants, the wetland is probably NOT a vernal pool</li> <li>- The soil in the wetland is shallow (&lt; 1 ft (30 cm) deep) and is underlain by an impermeable layer such as bedrock or clay</li> <li>- Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes - Go to SC 1.1    No - Not a vernal pool</p> <p>SC 1.1 Is the vernal pool relatively undisturbed in February and March?</p> <p style="text-align: right;">Yes - Go to SC 1.2    No - Not a vernal pool with special characteristics</p>	
<p>SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, marsh, lake, etc.)?</p> <p style="text-align: right;">Yes - Category II    No - Category III</p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0 Alkali wetlands</b></p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <li>- The wetland has a conductivity &gt; 3.0 mS/cm</li> <li>- The wetland has a conductivity between 2.0 and 3.0 mS, and more than 30% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems)</li> <li>- If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt</li> </ul> <p><b>OR</b> Does the wetland meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>- Salt encrustations around more than 75% of the edge of the wetland</li> <li>- More than 5% of the plant cover consists of species listed on Table 4</li> <li>- A pH above 8.5. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes - Category I    No - Not an alkali wetland</p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0 Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1 Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;">Yes - Go to SC 3.2    No - Go to SC 3.3</p> <p>SC 3.2 Is the wetland listed on the WADNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;">Yes - Category I    No - Not a WHCV</p> <p>SC 3.3 Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?</p> <p style="text-align: center;"><a href="http://www2.dnr.wa.gov/data/nr/whcv/wadnrwhcvwetlands.pdf">http://www2.dnr.wa.gov/data/nr/whcv/wadnrwhcvwetlands.pdf</a></p> <p style="text-align: right;">Yes - Contact WADNR/WADNR and go to SC 3.4    No - Not a WHCV</p> <p>SC 3.4 Has WADNR identified the wetland within the S/TR as a Wetland of High Conservation Value and it is listed on their website?</p> <p style="text-align: right;">Yes - Category I    No - Not a WHCV</p>	<p><b>Cat. I</b></p>

Wetland name or number E

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to SC 4.3 No – Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to SC 4.3 No = Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = Category I bog No – Go to SC 4.4  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = Category I bog No – Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = Is a Category I calcareous fen No = Is not a calcareous fen</p>	<p>Cat. I</p> <p>Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i></li> </ul> <p>Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics</p>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)</i>?          Yes = Category I No – Go to SC 5.2</p>	<p>Cat. I</p>
<p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = Category I No – Go to SC 5.3</p>	<p>Cat. I</p>
<p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)</i>?          Yes = Category II No – Go to SC 5.4</p>	<p>Cat. II</p>
<p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = Category II No = Not a forested wetland with special characteristics</p>	<p>Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>          Choose the highest rating if wetland falls into several categories          If you answered No for all types, enter "Not Applicable" on Summary Form</p>	



# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE: This question is independent of the land use between the wetland and the priority habitat.**

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number F

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland F Date of site visit: 5/1/20  
 Rated by Rachel Locke Trained by Ecology? Yes  No  Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

NOTE: Form is not complete without the figures requested (figures can be combined).  
 Source of base aerial photo/map \_\_\_\_\_

OVERALL WETLAND CATEGORY ✓ (based on functions \_\_\_\_\_ or special characteristics \_\_\_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- \_\_\_\_\_ Category III – Total score = 16-18
- Category IV – Total score = 9-15

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	<i>Circle the appropriate ratings</i>									
Site Potential	H	M	<u>L</u>	<u>H</u>	M	L	H	M	<u>L</u>	
Landscape Potential	H	<u>M</u>	L	H	<u>M</u>	L	H	M	<u>L</u>	
Value	<u>H</u>	M	L	H	M	<u>L</u>	H	M	<u>L</u>	TOTAL
Score Based on Ratings	6			6			3			15

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
Vernal Pools	<u>II</u>	III
Alkali	I	
Wetland of High Conservation Value	I	
Bog and Calcareous Fens	I	
Old Growth or Mature Forest – slow growing	I	
Aspen Forest	I	
Old Growth or Mature Forest – fast growing	II	
Floodplain forest	II	
None of the above	<input checked="" type="checkbox"/>	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

YES - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

YES - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

YES - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number F

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
<b>R 1.0. Does the site have the potential to improve water quality?</b>		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event:		
Depressions cover $> \frac{1}{3}$ area of wetland	points = 6	
Depressions cover $> \frac{1}{10}$ area of wetland	points = 3	
Depressions present but cover $< \frac{1}{10}$ area of wetland	points = 1	
No depressions present	points = 0	1
R 1.2. Structure of plants in the wetland (areas with $> 90\%$ cover at person height; not Cowardin classes):		
Forest or shrub $> \frac{2}{3}$ the area of the wetland	points = 10	
Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland	points = 5	
Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland	points = 5	
Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 0	2
<b>Total for R 1</b>	<b>Add the points in the boxes above</b>	<b>3</b>

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M  0-5 = L

Record the rating on the first page

<b>R 2.0. Does the landscape have the potential to support the water quality function of the site?</b>		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	1
R 2.4. Is $> 10\%$ of the area within 150 ft of wetland in land uses that generate pollutants	Yes = 1 No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source _____	Yes = 1 No = 0	0
<b>Total for R 2</b>	<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Landscape Potential** If score is: 3-6 = H  1 or 2 = M 0 = L

Record the rating on the first page

<b>R 3.0. Is the water quality improvement provided by the site valuable to society?</b>		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 No = 0	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? Answer YES if there is a TMDL for the drainage in which wetland is found.	Yes = 2 No = 0	2
<b>Total for R 3</b>	<b>Add the points in the boxes above</b>	<b>2</b>

**Rating of Value** If score is:  2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number

F

## RIVERINE WETLANDS

Points  
(only 1 score  
per box)

Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides:

Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).

If the ratio is more than 2

points = 10

If the ratio is 1-2

points = 8

If the ratio is  $\frac{1}{2}$ -<1

points = 4

If the ratio is  $\frac{1}{4}$ -< $\frac{1}{2}$ 

points = 2

If the ratio is <  $\frac{1}{4}$ 

points = 1

8

R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have &gt; 90% cover at person height. These are NOT Cowardin classes).

Forest or shrub for more than  $\frac{2}{3}$  the area of the wetland

points = 6

Forest or shrub for  $>\frac{1}{3}$  area OR emergent plants  $>\frac{2}{3}$  area

points = 4

Forest or shrub for  $>\frac{1}{10}$  area OR emergent plants  $>\frac{1}{3}$  area

points = 2

Plants do not meet above criteria

points = 0

4

Total for R 5

Add the points in the boxes above

12

Rating of Site Potential If score is:  12-16 = H  6-11 = M  0-5 = L

Record the rating on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

R 5.1. Is the stream or river adjacent to the wetland downcut?

Yes = 0 No = 1

0

R 5.2. Does the up-gradient watershed include a UGA or incorporated area?

Yes = 1 No = 0

0

R 5.3. Is the up-gradient stream or river controlled by dams?

Yes = 0 No = 1

1

Total for R 5

Add the points in the boxes above

1

Rating of Landscape Potential If score is:  3 = H  1 or 2 = M  0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.

The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources

points = 2

Surface flooding problems are in a basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

0

R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for R 6

Add the points in the boxes above

0

Rating of Value If score is:  2-4 = H  1 = M  0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?		
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is $\geq \frac{1}{4}$ ac or $\geq 10\%$ of the wetland if wetland is $< 2.5$ ac. Aquatic bed <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have $> 30\%$ cover <input type="checkbox"/> Emergent plants >12-40 in (>30-100 cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Emergent plants $> 40$ in ( $> 100$ cm) high are the highest layer with $>30\%$ cover <input type="checkbox"/> Scrub-shrub (areas where shrubs have $>30\%$ cover) <input type="checkbox"/> Forested (areas where trees have $>30\%$ cover)		4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0
H 1.2. Is one of the vegetation types Aquatic Bed?		Yes = 1 No = 0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least $\frac{1}{4}$ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least $\frac{1}{4}$ ac or 10% of its area? Answer yes only if H 1.3.1 is No.		Yes = 3 points & go to H 1.4 No = go to H 1.3.2 Yes = 3 No = 0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> . Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species <u>4</u>		Scoring: $> 9$ species: points = 2 4-9 species: points = 1 $\leq 4$ species: points = 0
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.		Figure <u>    </u>
		0

Wetland name or number F

<p><b>H 1.6. Special habitat features</b>          Check the habitat features that are present in the wetland. The number of checks is the number of points.  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	4

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M  0-6 = L Record the rating on the first page

<p><b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b></p>	
<p><b>H 2.1. Accessible habitat</b> (only area of habitat abutting wetland). If total accessible habitat is:          Calculate: % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %          &gt; 1/3 (33.3%) of 1 km Polygon points = 3          20-33% of 1km Polygon points = 2          10-19% of 1km Polygon points = 1          &lt;10% of 1km Polygon points = 0</p>	1
<p><b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b>          Calculate: % undisturbed habitat _____ + [(% moderate and low intensity land uses)/2] _____ = _____ %          Undisturbed habitat &gt; 50% of Polygon points = 3          Undisturbed habitat 10 - 50% and in 1-3 patches points = 2          Undisturbed habitat 10 - 50% and &gt; 3 patches points = 1          Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p><b>H 2.3. Land use intensity in 1 km Polygon:</b>          &gt; 50% of Polygon is high intensity land use points = 3          Does not meet criterion above points = 0</p>	-2
<p><b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>          Yes = 3 No = 0</p>	0
<p>Total for H 2</p>	0

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M  < 1 = L Record the rating on the first page

<p><b>H 3.0. Is the habitat provided by the site valuable to society?</b></p>	
<p><b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b>          Site meets ANY of the following criteria: points = 2  <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)  <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)  <input type="checkbox"/> It is mapped as a location for an individual WDFW species  <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan          Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1          Site does not meet any of the criteria above points = 0</p>	0

**Rating of Value** If score is: 2 = H 1 = M  0 = L Record the rating on the first page



## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. **NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland less than 4000 ft<sup>2</sup>, and does it meet at least two of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow (&lt; 1 ft (30 cm) deep) and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to SC 1.1 No = Not a vernal pool</p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics</p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II No = Category III</p>	Cat. II Cat. III
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet one of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity &gt; 3.0 mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p>OR does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than ¼ of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = Category I No = Not an alkali wetland</p>	Cat. I
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3</p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV</p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> Yes – Contact WNHP/WDNR and go to SC 3.4 No = Not a WHCV</p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = Category I No = Not a WHCV</p>	Cat. I

<p><b>SC 4.0 Bogs and Calcareous Fens</b> Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key to identify organic soils. Yes – Go to SC 4.3 No – Go to SC 4.2</p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 4.3 No – Is not a bog for rating</p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = Category I bog No – Go to SC 4.4 <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = Category I bog No – Go to SC 4.5</p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6</p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 µS/cm at multiple locations within the wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen</p>	<p>Cat. I</p> <p>Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b> Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H 1.1)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremulaoides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)</li> </ul> <p>Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics</p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? Yes = Category I No – Go to SC 5.2</p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremulaoides</i>) represents at least 20% of the total cover of woody species? Yes = Category I No – Go to SC 5.3</p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? Yes = Category II No – Go to SC 5.4</p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = Category II No = Not a forested wetland with special characteristics</p> <p><b>Category of wetland based on Special Characteristics</b> Choose the highest rating if wetland falls into several categories If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p>
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## Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife, 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE: This question is independent of the land use between the wetland and the priority habitat.**

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- **Old-growth/Mature forests:** **Old-growth east of Cascade crest** – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. **Mature forests** – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington, and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland Rating System for Eastern WA: 2014 Update

Effective January 1, 2015

Appendix B

# RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): G (v2) Date of site visit: Desktop

Rated by Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_

HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY III** (based on functions \_\_\_ or special characteristics \_\_\_)

## 1. Category of wetland based on FUNCTIONS

\_\_\_\_\_ Category I – Total score = 22-27

\_\_\_\_\_ Category II – Total score = 19-21

X Category III – Total score = 16-18

\_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
<i>Circle the appropriate ratings</i>										
Site Potential	H	M	<b>L</b>	<b>H</b>	M	L	H	M	<b>L</b>	
Landscape Potential	<b>H</b>	M	L	H	<b>M</b>	L	H	M	<b>L</b>	
Value	<b>H</b>	M	L	H	<b>M</b>	L	H	<b>M</b>	L	
<b>Score Based on Ratings</b>	7			7			4			<b>TOTAL</b> 18

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
<b>Vernal Pools</b>	<b>II</b>	<b>III</b>
<b>Alkali</b>	<b>I</b>	
<b>Wetland of High Conservation Value</b>	<b>I</b>	
<b>Bog and Calcareous Fens</b>	<b>I</b>	
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>	
<b>Aspen Forest</b>	<b>I</b>	
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>	
<b>Floodplain forest</b>	<b>II</b>	
None of the above	<b>Not Applicable</b>	

Wetland name or number \_\_\_\_\_

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO – go to 2**

**YES – The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

**YES – The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

**YES – The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO – go to 5**

**YES – The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number \_\_\_\_\_

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number G

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover $> \frac{1}{3}$ area of wetland Depressions cover $> \frac{1}{10}$ area of wetland Depressions present but cover $< \frac{1}{10}$ area of wetland No depressions present	points = 6 points = 3 <b>points = 1</b> points = 0	1
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; <b>not</b> Cowardin classes): Forest or shrub $> \frac{2}{3}$ the area of the wetland Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland Ungrazed herbaceous plants $\frac{1}{3} - \frac{2}{3}$ area of wetland Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 10 points = 5 points = 5 <b>points = 2</b> points = 0	2
Total for R 1	Add the points in the boxes above	3

**Rating of Site Potential** If score is: 12-16 = H 6-11 = M X 0-5 = L *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 <b>No = 0</b>	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 <b>No = 0</b>	0
R 2.3. Does at least 10% of the contributing basin contain <b>tilled fields, pastures</b> , or forests that have been clearcut within the last 5 years?	<b>Yes = 1</b> No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants	<b>Yes = 1</b> No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions		1
R 2.1-R 2.4? Source <u>Livestock and likely septic tank</u> at adjacent home	<b>Yes = 1</b> No = 0	
Total for R 2	Add the points in the boxes above	3

**Rating of Landscape Potential** If score is: X 3-6 = H 1 or 2 = M 0 = L *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	<b>Yes = 1</b> No = 0	1
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 <b>No = 0</b>	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the drainage in which wetland is found.</i>	<b>Yes = 2</b> No = 0	2
Total for R 3	Add the points in the boxes above	3

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L *Record the rating on the first page*



**RIVERINE WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides:

*Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*

- If the ratio is more than 2 points = 10
- If the ratio is 1-2 points = 8
- If the ratio is ½-<1 points = 4
- If the ratio is ¼-< ½ points = 2
- If the ratio is < ¼ points = 1

10

R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*

- Forest or shrub for more than 2/3 the area of the wetland points = 6
- Forest or shrub for >1/3 area OR emergent plants > 2/3 area points = 4
- Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points = 2
- Plants do not meet above criteria points = 0

2

Total for R 4

Add the points in the boxes above

12

**Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 **No = 1**

1

R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 **No = 0**

0

R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 **No = 1**

1

Total for R 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is: \_\_\_ 3 = H X 1 or 2 = M \_\_\_ 0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.*

0

- The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources points = 2
- Surface flooding problems are in a basin farther down-gradient points = 1
- No flooding problems anywhere downstream points = 0

R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 **No = 0**

0


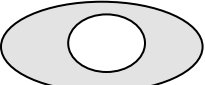
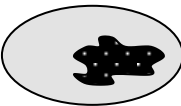
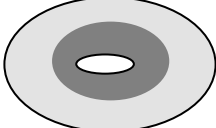
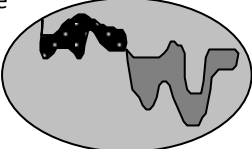
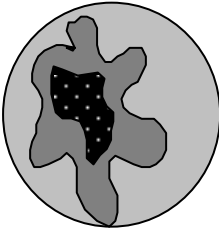
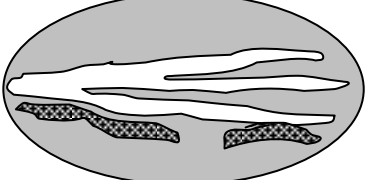
Total for R 6

Add the points in the boxes above

0

**Rating of Value** If score is: \_\_\_ 2-4 = H \_\_\_ 1 = M X 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)                      4 or more checks: points = 3</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)                                      3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>		1
H 1.2. Is one of the vegetation types Aquatic Bed?                                      Yes = 1    No = 0		0
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>                      Yes = 3 points &amp; go to H 1.4    No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>                      Yes = 3    No = 0</p>		3
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>0</u></p> <p style="text-align: center;">100% Reed Canarygrass</p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2          4-9 species: points = 1  <b><math>&lt; 4</math> species: points = 0</b></p>		0
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are High = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>		Figure__  1

Wetland name or number G

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	5

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M X 0-6 = L Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> 0 % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>5.6</u> = <u>5.6</u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> 0 % undisturbed habitat <u>2.0</u> + [(% moderate and low intensity land uses)/2] <u>21.4</u> = <u>23.4</u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2            Undisturbed habitat 10 - 50% and &gt; 3 patches points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:            &gt; 50% of Polygon is high intensity land use points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 No = 0</p>	0
<p>Total for H 2</p>	Add the points in the boxes above

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <u>Site has 1 or 2 priority habitats within 100 m (see Appendix B)</u> points = 1            Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is: 2 = H X 1 = M 0 = L Record the rating on the first page

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>    <b>No = Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b>    No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b>    No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    <b>No = Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b>    <b>No – Go to SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b>    <b>No = Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b>    <b>No = Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b>    <b>No = Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">N/A</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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Wetland name or number H

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): H Date of site visit: 7/24/2021  
 Rated by Brandon Stimac and Bridget Wojtala Trained by Ecology?  Yes  No Date of training Oct. 2020  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

### OVERALL WETLAND CATEGORY Cat. IV (based on functions or special characteristics )

#### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L	
Landscape Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L	
Value	<input checked="" type="radio"/> H M L	H M <input type="radio"/> L	H M <input type="radio"/> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>X</b>



Wetland name or number     H    

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number     H    

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number     H    

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland has no surface water outlet	points = 5	5
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)</u>	YES = 3 <b>NO = 0</b>	0
D 1.3. <u>Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)</u>		
Wetland has <u>persistent, ungrazed, vegetation for &gt; 2/3 of area</u>	points = 5	3
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	0
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		8

**Rating of Site Potential** If score is:      12- 16 = H   X   6- 11 = M      0- 5 = L

*Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 <b>No = 0</b>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<b>Yes = 1</b> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <b>No = 0</b>	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 <b>No = 0</b>	0
Total for D 2		1

**Rating of Landscape Potential** If score is:      3 or 4 = H   X   1 or 2 = M      0 = L

*Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 <b>No = 0</b>	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	<b>Yes = 1</b> No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	<b>Yes = 2</b> No = 0	2
Total for D 3		3

**Rating of Value** If score is:   X   2-4 = H      1 = M      0 = L

*Record the rating on the first page*

Wetland name or number     H    

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 8
- Wetland has an intermittently flowing outlet points = 4
- Wetland has a highly constricted permanently flowing outlet points = 4
- Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

8

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is:     12-16 = H       X  6-11 = M         0-5 = L    

*Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 No = 0

1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is:     3 = H       X  1 or 2 = M         0 = L    

*Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

0

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* The wetland receives and stores very little water in the watershed. points = 0

There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

0

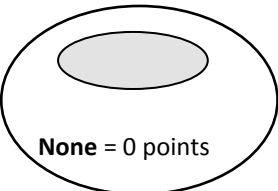
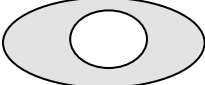

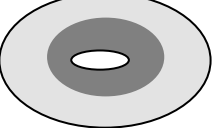
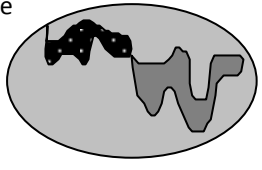
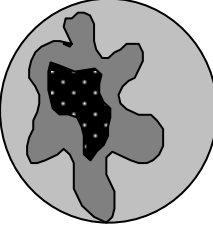
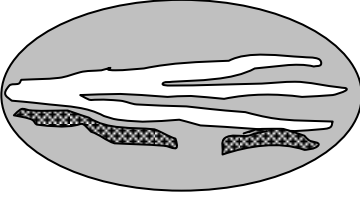
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is:     2-4 = H         1 = M       X  0 = L    

*Record the rating on the first page*

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover  <input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)  <input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)</p> <p style="text-align: right;">4 or more checks: points = 3            3 checks: points = 2  <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>2 checks: points = 1            1 check: points = 0</p>	1	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/> No = 0	1
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <b>Answer YES for Lake Fringe wetlands.</b>            Yes = 3 points &amp; go to H 1.4. <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <b>Answer yes only if H 1.3.1 is No.</b>            Yes = 3 <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>No = 0</p>	0	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>  6  </u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2  <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>4-9 species: points = 1  <math>&lt; 4</math> species: points = 0</p>	1	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	Figure 1  0	

Wetland name or number     H    

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	2

**Rating of Site Potential** If score is:     15-18 = H         7-14 = M       X  0-6 = L     Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  0  </u> = <u>  0  </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u> 14.9 </u> = <u> 14.9 </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 <u>No = 0</u></p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is:     4-9 = H         1-3 = M       X  < 1 = L     Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan            Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1  <u>Site does not meet any of the criteria above</u> points = 0</p>	0

**Rating of Value** If score is:     2 = H         1 = M       X  0 = L     Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      — The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.                      — Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p align="center"><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      — The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      — Salt encrustations around more than 75% of the edge of the wetland                      — More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<p align="center"><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p align="center"><b>Cat. I</b></p>



<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">N/A</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

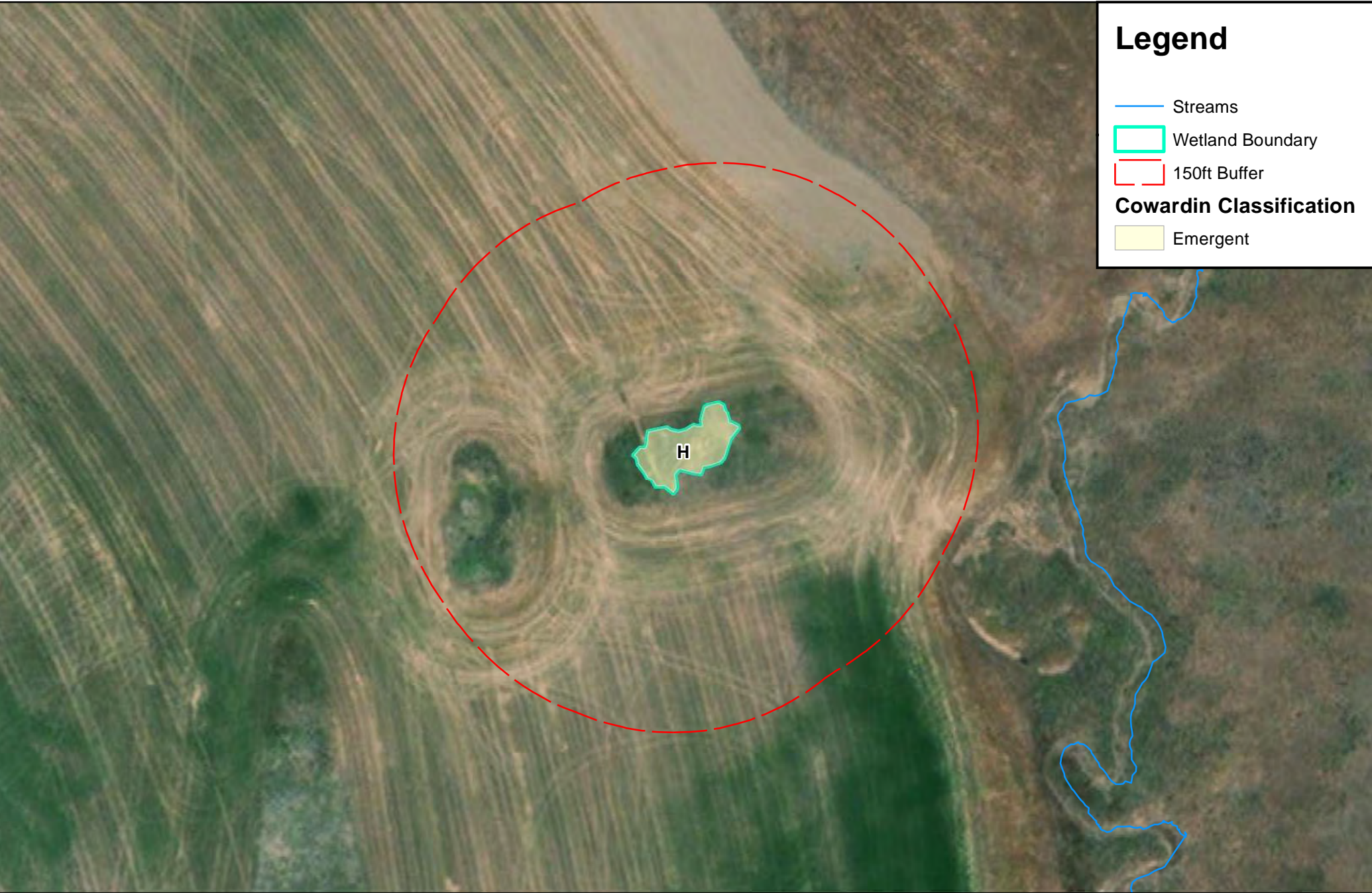
Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

**Legend**

- Streams
- Wetland Boundary
- 150ft Buffer
- Cowardin Classification**
- Emergent



**Figure 1. Wetland H Cowardin Classifications**  
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# Legend

- Streams
- Wetland Boundary
- Hydroperiods**
  - Saturated Only



Figure 2. Wetland H Hydroperiods  
Carriger Solar, LLC | Wetland Ratings | August 2021



# Legend

- Streams
- Wetlands
- Contributing Basin

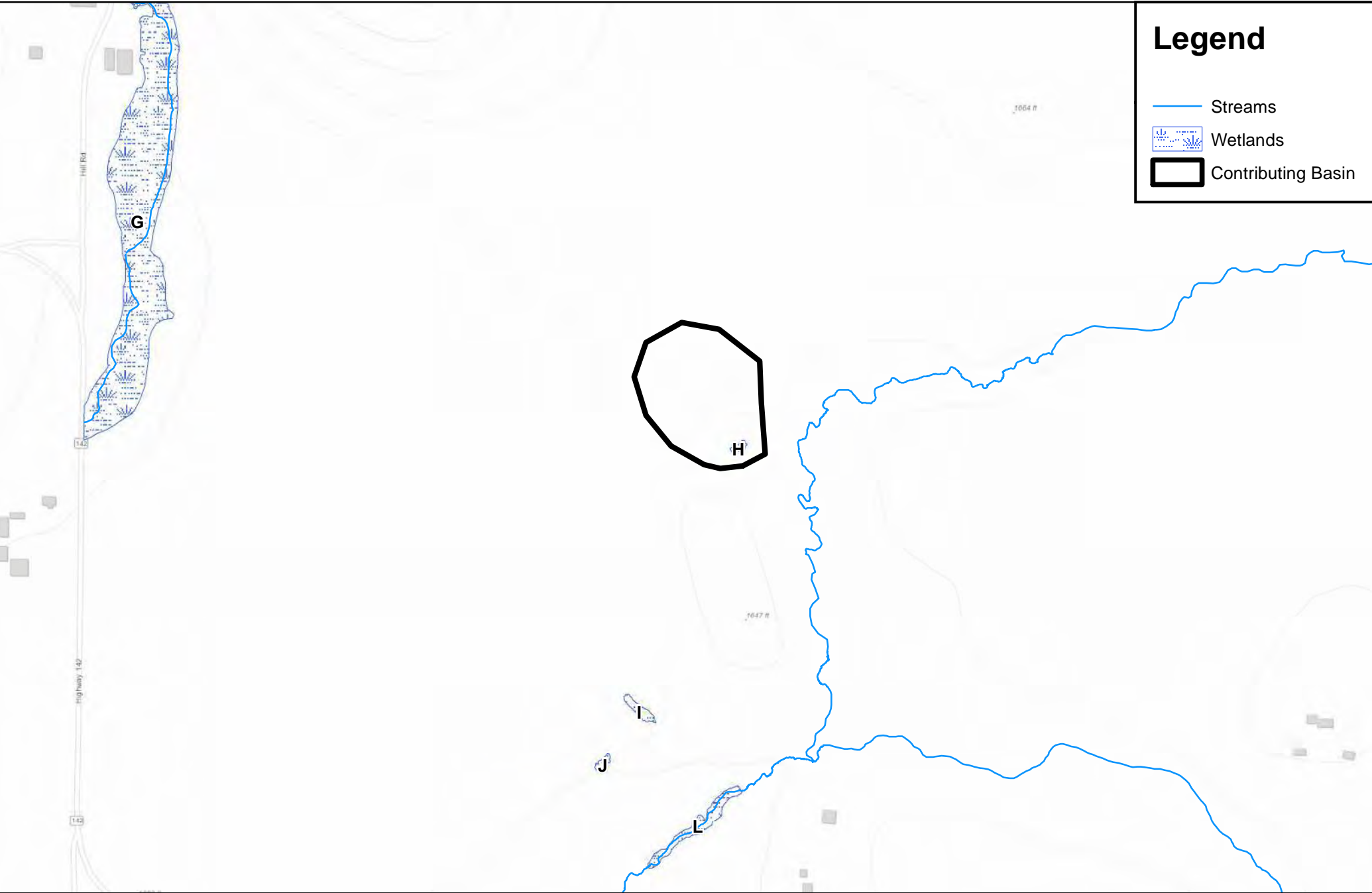
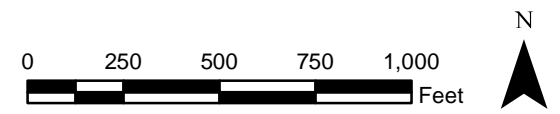







Figure 3. Wetland H Contributing Basin  
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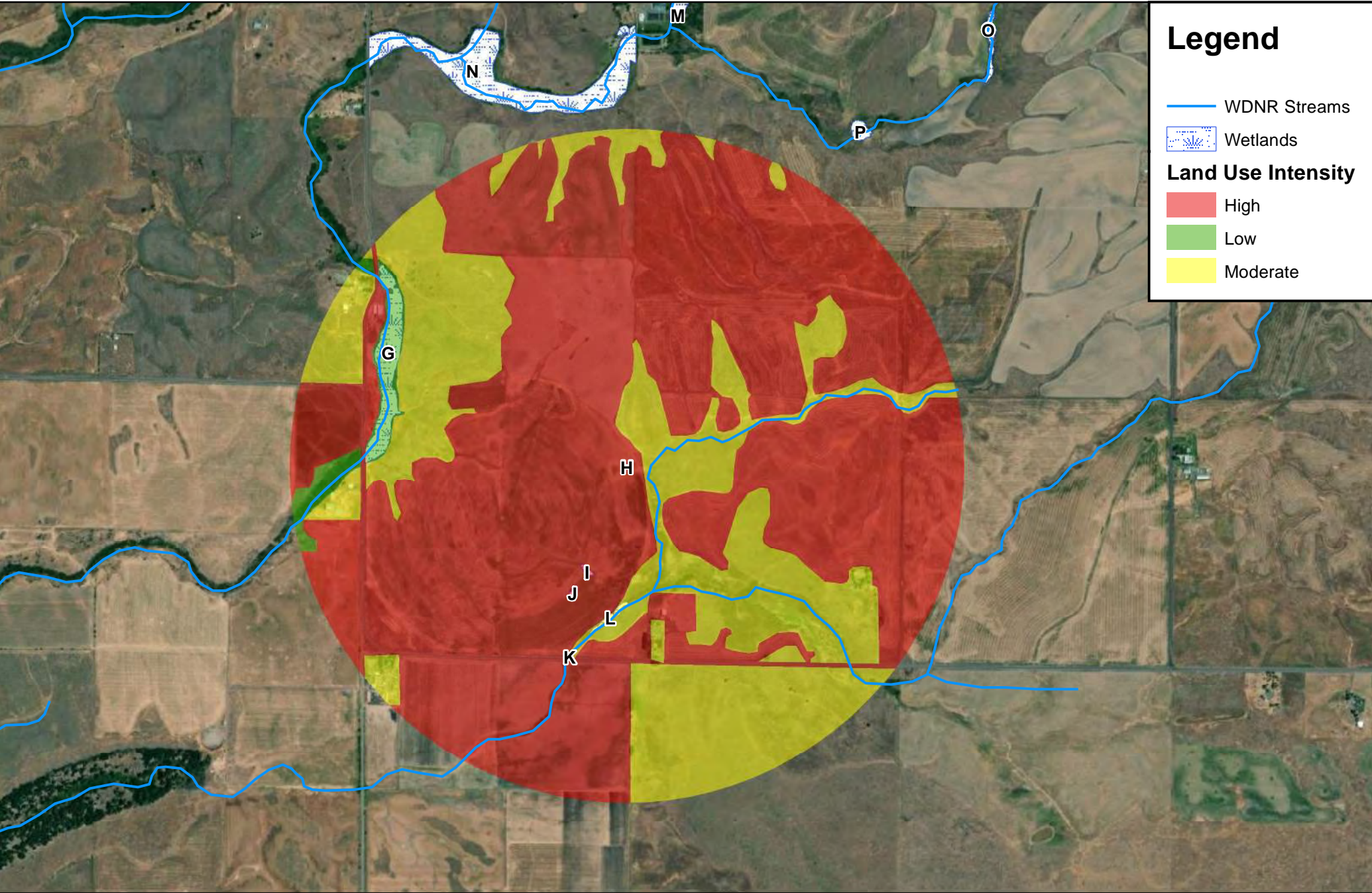


**Legend**

-  WDNR Streams
-  Wetlands

**Land Use Intensity**

-  High
-  Low
-  Moderate



**Figure 4. Wetland H Land Use and Habitat Map**  
 Carriger Solar, LLC | Wetland Ratings | August 2021



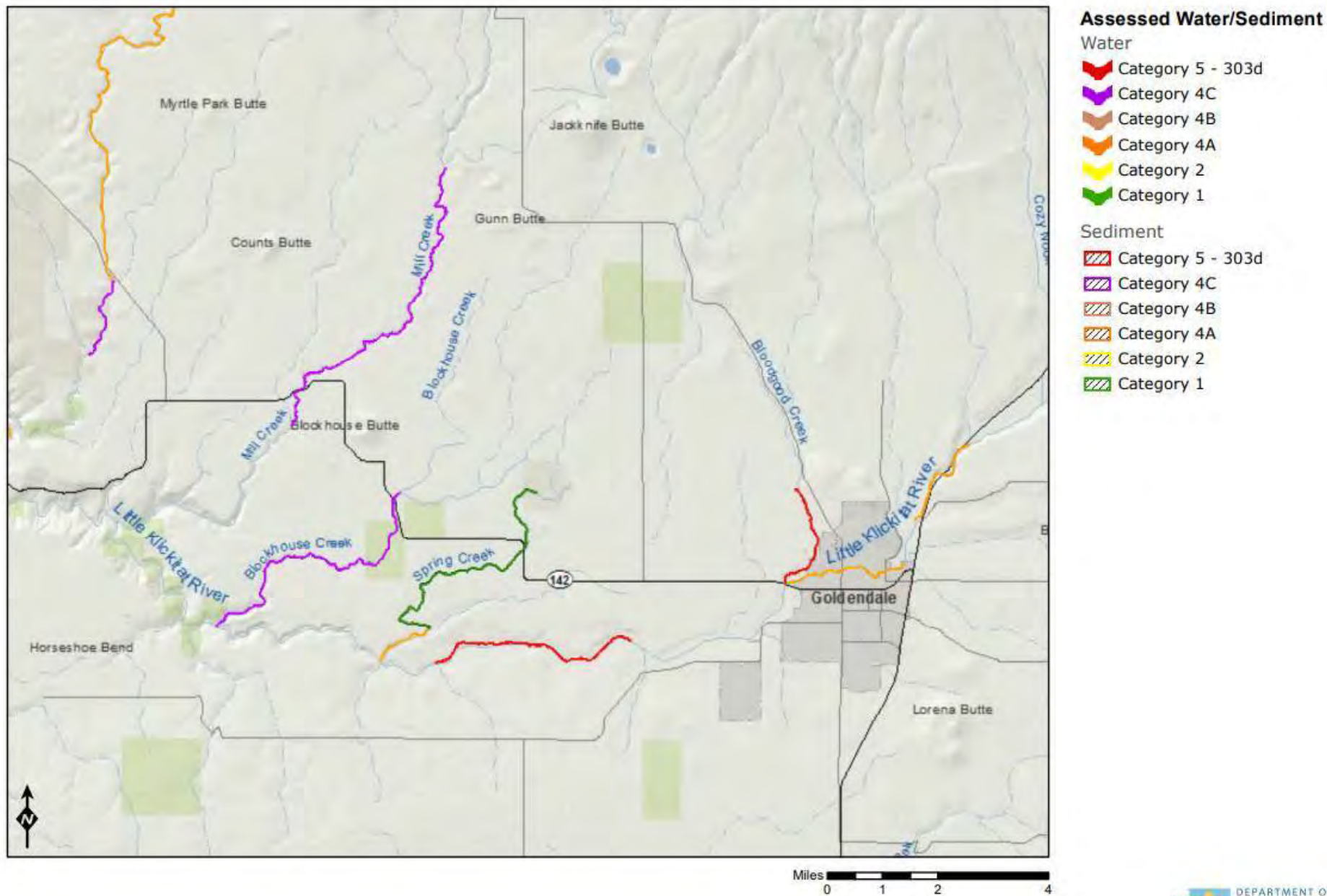


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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Wetland name or number I

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): I Date of site visit: 7/24/2021

Rated by Brandon Stimac and Bridget Wojtala Trained by Ecology?  Yes  No Date of training Oct. 2020

HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**

Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** Cat. IV (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

**Category I** – Total score = 22-27

**Category II** – Total score = 19-21

**Category III** – Total score = 16-18

**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L	
Landscape Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L	
Value	<input checked="" type="radio"/> H M L	H M <input type="radio"/> L	H M <input type="radio"/> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>X</b>

Wetland name or number   1  

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number   1  

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number 1

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland has no surface water outlet	points = 5	5
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5	3
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3	
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1	
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3	0
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	8

**Rating of Site Potential** If score is: 12- 16 = H X 6- 11 = M 0- 5 = L

*Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0	0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H X 1 or 2 = M 0 = L

*Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

*Record the rating on the first page*

Wetland name or number 1

### DEPRESSIONAL WETLANDS

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 8
- Wetland has an intermittently flowing outlet points = 4
- Wetland has a highly constricted permanently flowing outlet points = 4
- Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

8

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L

*Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

- D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0
- D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 No = 0
- D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0

0

1

1

Total for D 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is: 3 = H X 1 or 2 = M 0 = L

*Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

- Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2
- Surface flooding problems are in a sub-basin farther down-gradient points = 1

0

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* The wetland receives and stores very little water in the watershed. points = 0

There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

0

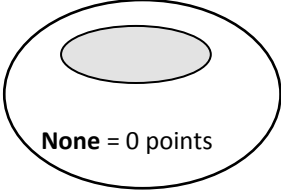
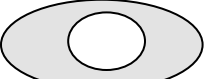
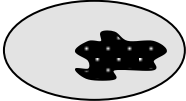
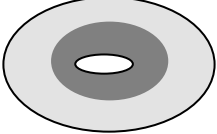
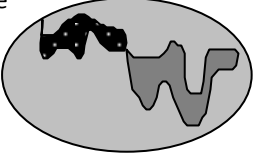
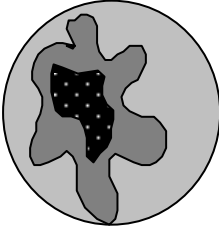
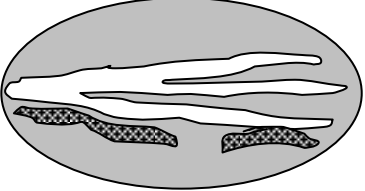
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M X 0 = L

*Record the rating on the first page*

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
H 1.0. Does the wetland have the potential to provide habitat for many species?		
<p>H 1.1. Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)      4 or more checks: points = 3</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)      3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	1	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1    No = 0	1
<p>H 1.3. <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p style="text-align: right;">Yes = 3 points &amp; go to H 1.4    No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p> <p style="text-align: right;">Yes = 3    No = 0</p>	0	
<p>H 1.4. <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.</i></p> <p><i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>  7  </u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2</p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>	1	
<p>H 1.5. <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: right;">Riparian braided channels with 2 classes</p>	Figure 1  0	

Wetland name or number   I  

<p><b>H 1.6. Special habitat features</b>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.</p> <p><input type="checkbox"/> Cattails or bulrushes are present within the wetland.</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.</p> <p><input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity</p> <p><input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	3

**Rating of Site Potential** If score is:   15-18   = H   7-14   = M   X  0-6   = L Record the rating on the first page

<p><b>H 2.0. Does the landscape have the potential to support habitat functions of the site?</b></p>	
<p><b>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:</b>  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  0  </u> = <u>  0  </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p><b>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.</b>  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  16.4  </u> = <u>  16.4  </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p><b>H 2.3. Land use intensity in 1 km Polygon:</b>  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p><b>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</b>            Yes = 3 <u>No = 0</u></p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is:   4-9   = H   1-3   = M   X  < 1   = L Record the rating on the first page

<p><b>H 3.0. Is the habitat provided by the site valuable to society?</b></p>	
<p><b>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose the highest score that applies to the wetland being rated</b></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see Appendix B)</li> <li><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)</li> <li><input type="checkbox"/> It is mapped as a location for an individual WDFW species</li> <li><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</li> </ul> <p>Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1  <u>Site does not meet any of the criteria above</u> points = 0</p>	0

**Rating of Value** If score is:   2   = H   1   = M   X  0   = L Record the rating on the first page



### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p> <p><b>SC 1.0. Vernal pools</b>            Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?            — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.            — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>            — The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.            — Surface water is present for less than 120 days during the wet season.  <div style="text-align: right;">Yes – Go to <b>SC 1.1</b>    No = <b>Not a vernal pool</b></div> </p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <div style="text-align: right;">Yes – Go to <b>SC 1.2</b>    No = <b>Not a vernal pool with special characteristics</b></div> </p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <div style="text-align: right;">Yes = <b>Category II</b>    No = <b>Category III</b></div> </p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b>            Does the wetland meet <b>one</b> of the following criteria?            — The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.            — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).            — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?            — Salt encrustations around more than 75% of the edge of the wetland            — More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4            — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.  <div style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not an alkali wetland</b></div> </p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>            SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <div style="text-align: right;">Yes – Go to <b>SC 3.2</b>    No – Go to <b>SC 3.3</b></div>           SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <div style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></div>           SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <div style="text-align: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b>    No = <b>Not a WHCV</b></div>           SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <div style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></div> </p>	<b>Cat. I</b>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>                  Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>                  Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?                  Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?                  Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?                  Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:                  — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems                  — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland                  Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>                  Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? <i>(Continue only if you have identified that a forested class is present in question H 1.1)</i></p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW <i>(see definitions in question H3.1)</i></li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees <i>(see Table 7)?</i>                  Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?                  Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species <i>(see Table 7)?</i>                  Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?                  Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>                  Choose the highest rating if wetland falls into several categories                  If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">N/A</p>
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# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)


Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.


**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

# Legend

 Wetland Boundary

 150ft Buffer

## Cowardin Classification

 Emergent



### Figure 1. Wetland I Cowardin Classifications

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# Legend

 Wetland Boundary

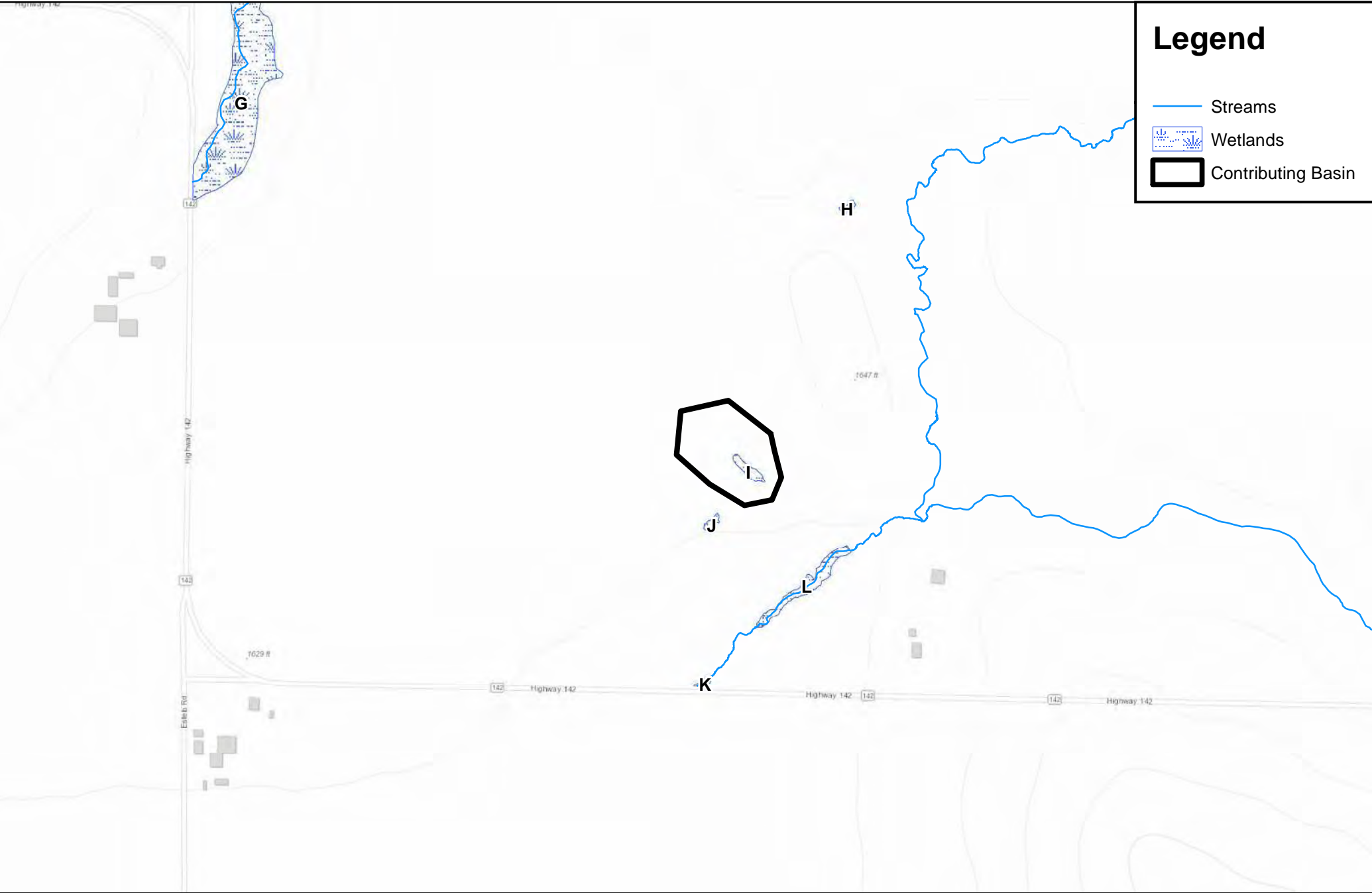
## Hydroperiods

 Saturated Only



**Figure 2. Wetland I Hydroperiods**  
Carriger Solar, LLC | Wetland Ratings | August 2021

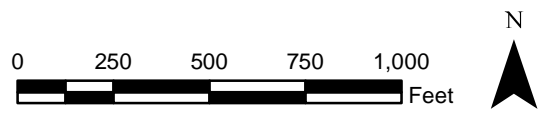




### Legend

- Streams
- ▨ Wetlands
- Contributing Basin

**Figure 3. Wetland I Contributing Basin**  
 Carriger Solar, LLC | Wetland Ratings | August 2021



# Legend

- WDNR Streams
- Wetlands
- Land Use Intensity**
  - High
  - Low
  - Moderate

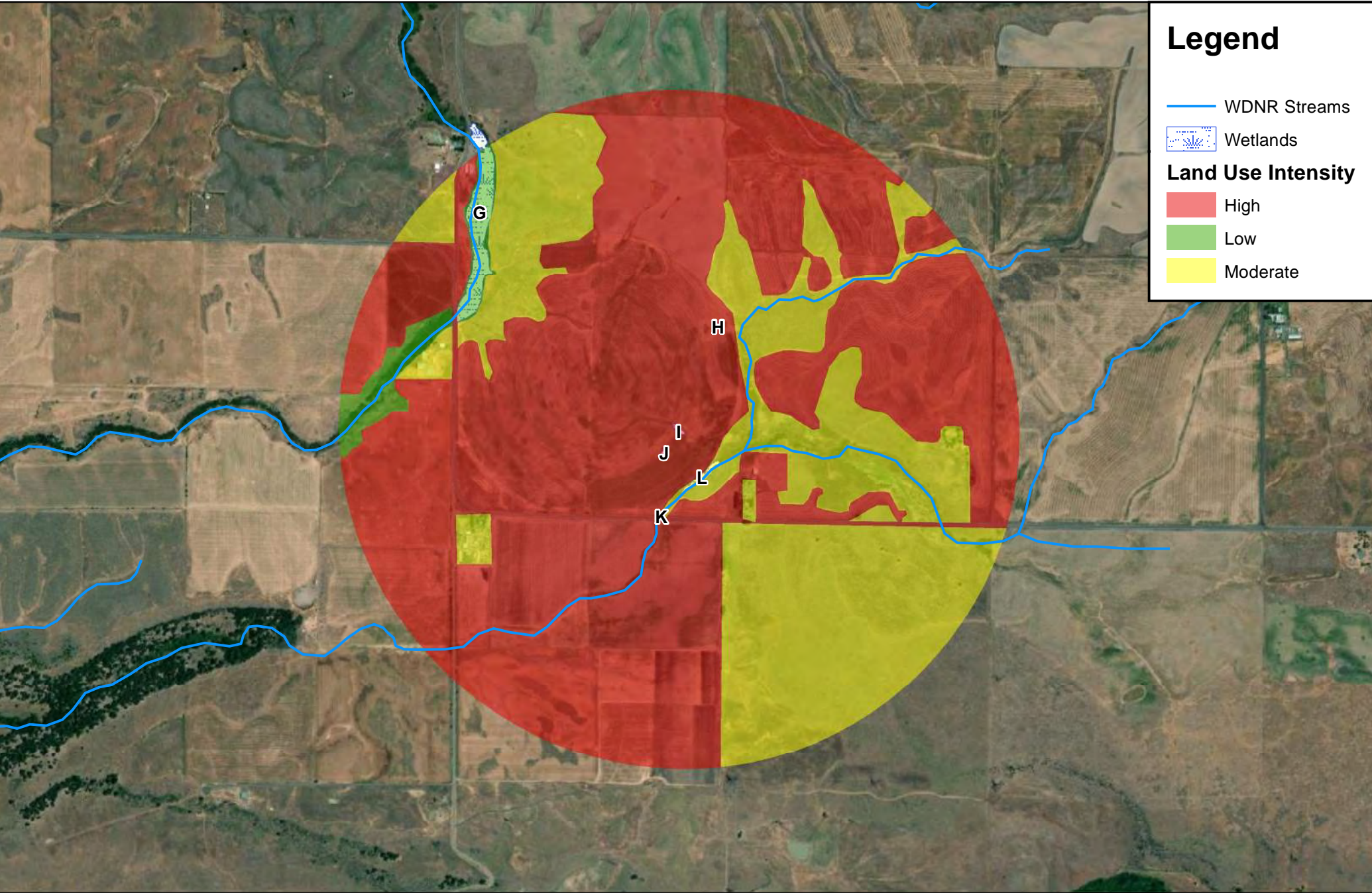


Figure 4. Wetland I Land Use and Habitat Map  
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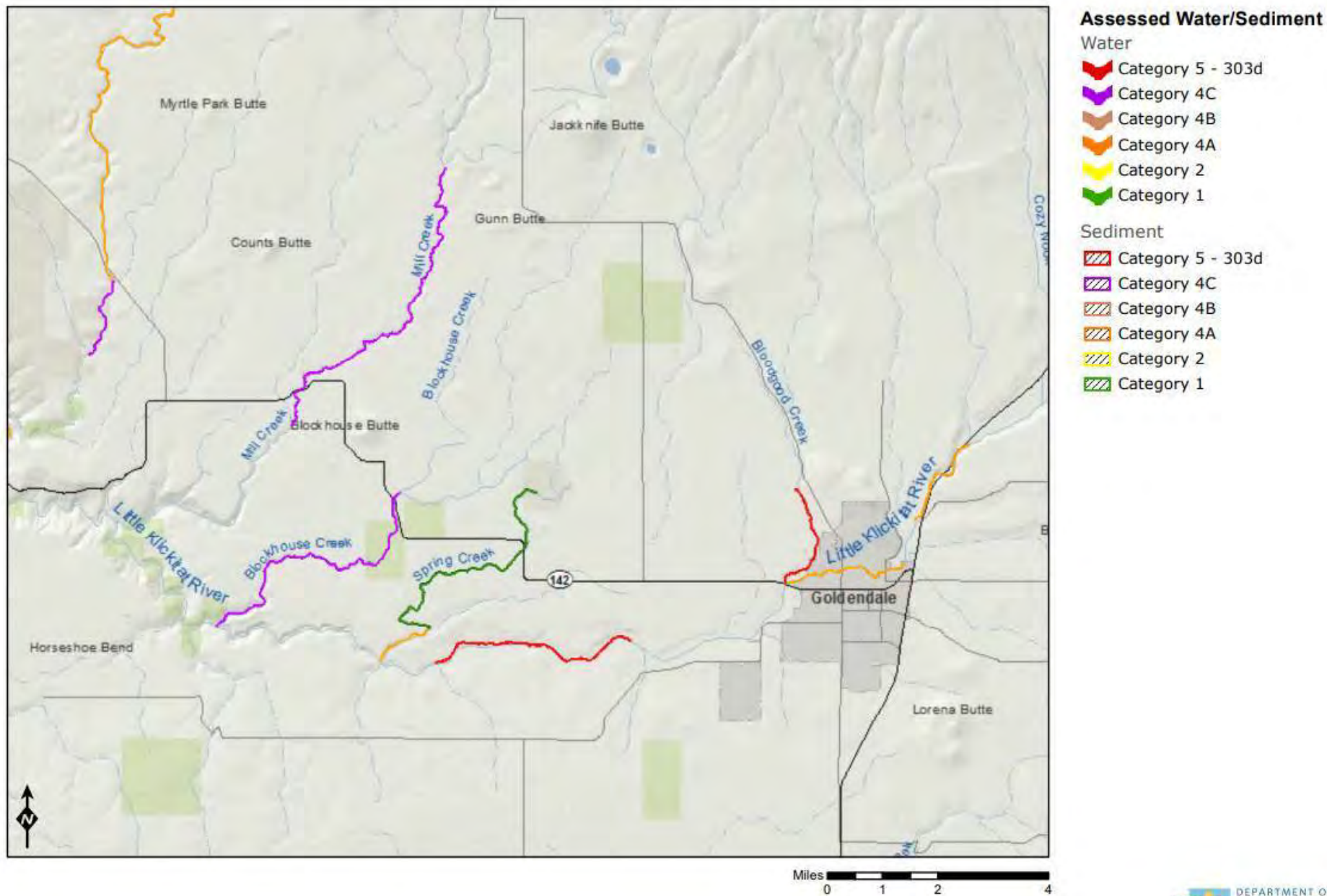


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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Wetland name or number J

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): J Date of site visit: 7/24/2021  
 Rated by Brandon Stimac and Bridget Wojtala Trained by Ecology?  Yes \_\_\_ No Date of training Oct. 2020  
 HGM Class used for rating Depressional Wetland has multiple HGM classes? \_\_\_ Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

### OVERALL WETLAND CATEGORY Cat. IV (based on functions or special characteristics \_\_\_)

#### 1. Category of wetland based on FUNCTIONS

- \_\_\_ Category I – Total score = 22-27  
 \_\_\_ Category II – Total score = 19-21  
 \_\_\_ Category III – Total score = 16-18  
 Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H M (L)	
Value	(H) M L	H M (L)	H M (L)	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>15</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>X</b>

Wetland name or number     J    

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
  - At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?
- The wetland is on a slope (*slope can be very gradual*),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
  - The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
  - The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number     J    

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number J

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
Wetland has no surface water outlet	points = 5		5
Wetland has an intermittently flowing outlet	points = 3		
Wetland has a highly constricted permanently flowing outlet	points = 3		
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1		
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions of soils)	YES = 3 NO = 0		0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)			
Wetland has persistent, ungrazed, vegetation for $> \frac{2}{3}$ of area	points = 5		3
Wetland has persistent, ungrazed, vegetation from $\frac{1}{3}$ to $\frac{2}{3}$ of area	points = 3		
Wetland has persistent, ungrazed vegetation from $\frac{1}{10}$ to $< \frac{1}{3}$ of area	points = 1		
Wetland has persistent, ungrazed vegetation $< \frac{1}{10}$ of area	points = 0		
D 1.4. Characteristics of seasonal ponding or inundation:			
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>			
Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	points = 3		0
Area seasonally ponded is $\frac{1}{4}$ - $\frac{1}{2}$ total area of wetland	points = 1		
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points = 0		
Total for D 1		Add the points in the boxes above	8

**Rating of Site Potential** If score is: 12- 16 = H X 6- 11 = M 0- 5 = L

*Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 No = 0		0
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0		1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0		0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____	Yes = 1 No = 0		0
Total for D 2		Add the points in the boxes above	1

**Rating of Landscape Potential** If score is: 3 or 4 = H X 1 or 2 = M 0 = L

*Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?			
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 No = 0		0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 No = 0		1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the drainage or basin in which the wetland is found)?	Yes = 2 No = 0		2
Total for D 3		Add the points in the boxes above	3

**Rating of Value** If score is: X 2-4 = H 1 = M 0 = L

*Record the rating on the first page*

Wetland name or number J

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland has no surface water outlet points = 8
- Wetland has an intermittently flowing outlet points = 4
- Wetland has a highly constricted permanently flowing outlet points = 4
- Wetland has a permanently flowing unconfined surface outlet points = 0
- (If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

8

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

- Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8
- Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6
- The wetland is a headwater wetland points = 4
- Seasonal ponding: 1 ft - < 2 ft points = 4
- Seasonal ponding: 6 in - < 1 ft points = 2
- Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

0

Total for D 4

Add the points in the boxes above

8

**Rating of Site Potential** If score is: 12-16 = H X 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

- D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0
- D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 No = 0
- D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Yes = 1 No = 0

0

1

1

Total for D 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

- Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2
- Surface flooding problems are in a sub-basin farther down-gradient points = 1

0

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* The wetland receives and stores very little water in the watershed. points = 0

There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

0

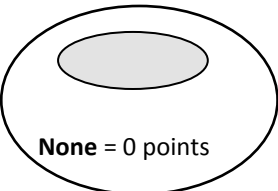
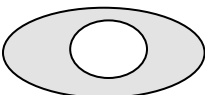

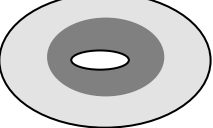
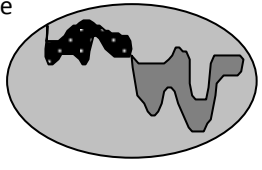
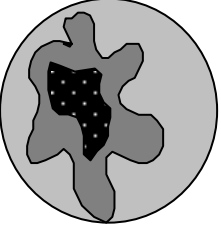
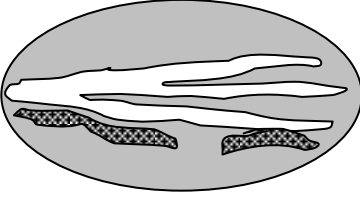
Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is: 2-4 = H 1 = M X 0 = L

Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed  <input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover  <input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (&gt;30-100 cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover  <input type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)  <input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)</p> <p style="text-align: right;">4 or more checks: points = 3            3 checks: points = 2  <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>2 checks: points = 1            1 check: points = 0</p>	<b>1</b>	
<p><b>H 1.2.</b> Is one of the vegetation types Aquatic Bed?</p> <p style="text-align: right;">Yes = 1 <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>No = 0</p>	<b>1</b>	
<p><b>H 1.3. Surface water</b></p> <p><b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>            Yes = 3 points &amp; go to H 1.4 <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>No = go to H 1.3.2</p> <p><b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>            Yes = 3 <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>No = 0</p>	<b>0</b>	
<p><b>H 1.4. Richness of plant species</b>            Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i>            # of species <u>  6  </u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2  <input style="border: 1px solid black; border-radius: 50%; padding: 2px;"/>4-9 species: points = 1  <math>&lt; 4</math> species: points = 0</p>	<b>1</b>	
<p><b>H 1.5. Interspersion of habitats</b>            Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.  <i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None = 0 points</b></p> </div> <div style="text-align: center;">  <p><b>Low = 1 point</b></p> </div> <div style="text-align: center;">  <p><b>Moderate = 2 points</b></p> </div> <div style="text-align: center;">  </div> </div> <p>All three diagrams in this row are <b>High = 3 points</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	<b>Figure 1</b>  <b>0</b>	



Wetland name or number     J    

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	3

**Rating of Site Potential** If score is:     15-18 = H         7-14 = M       X  0-6 = L     Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  0  </u> = <u>  0  </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u> 16.3 </u> = <u> 16.3 </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 <u>No = 0</u></p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is:     4-9 = H         1-3 = M       X  < 1 = L     Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan            Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1  <u>Site does not meet any of the criteria above</u> points = 0</p>	0

**Rating of Value** If score is:     2 = H         1 = M       X  0 = L     Record the rating on the first page

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      — The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.                      — Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p style="text-align: center;"><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      — The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      — Salt encrustations around more than 75% of the edge of the wetland                      — More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<p style="text-align: center;"><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p style="text-align: center;"><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">N/A</p>
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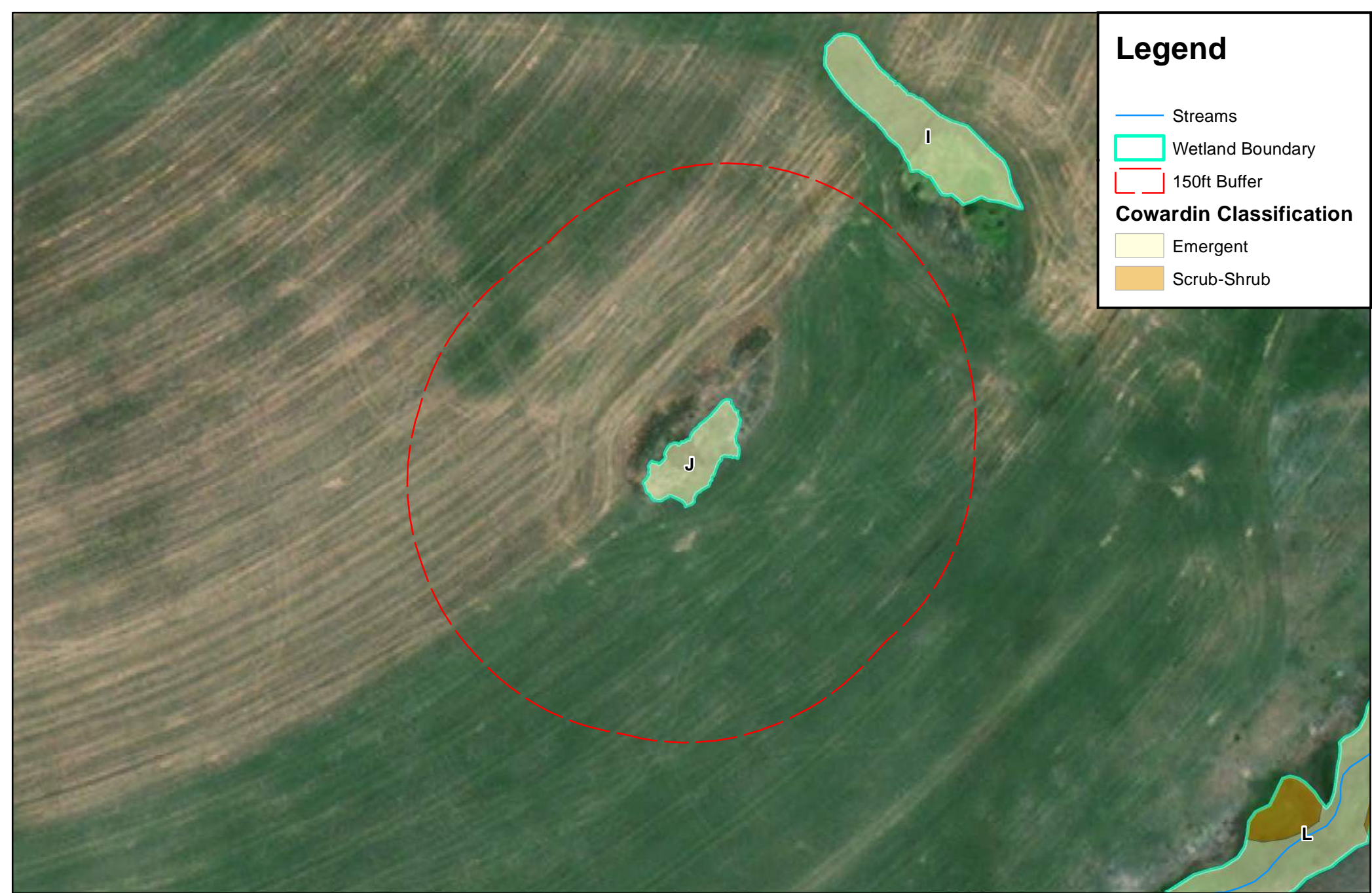
# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

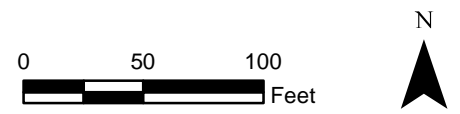
- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



**Figure 1. Wetland J Cowardin Classifications**

Carriger Solar, LLC | Wetland Ratings | August 2021



# Legend

Streams

Wetland Boundary

## Hydroperiods

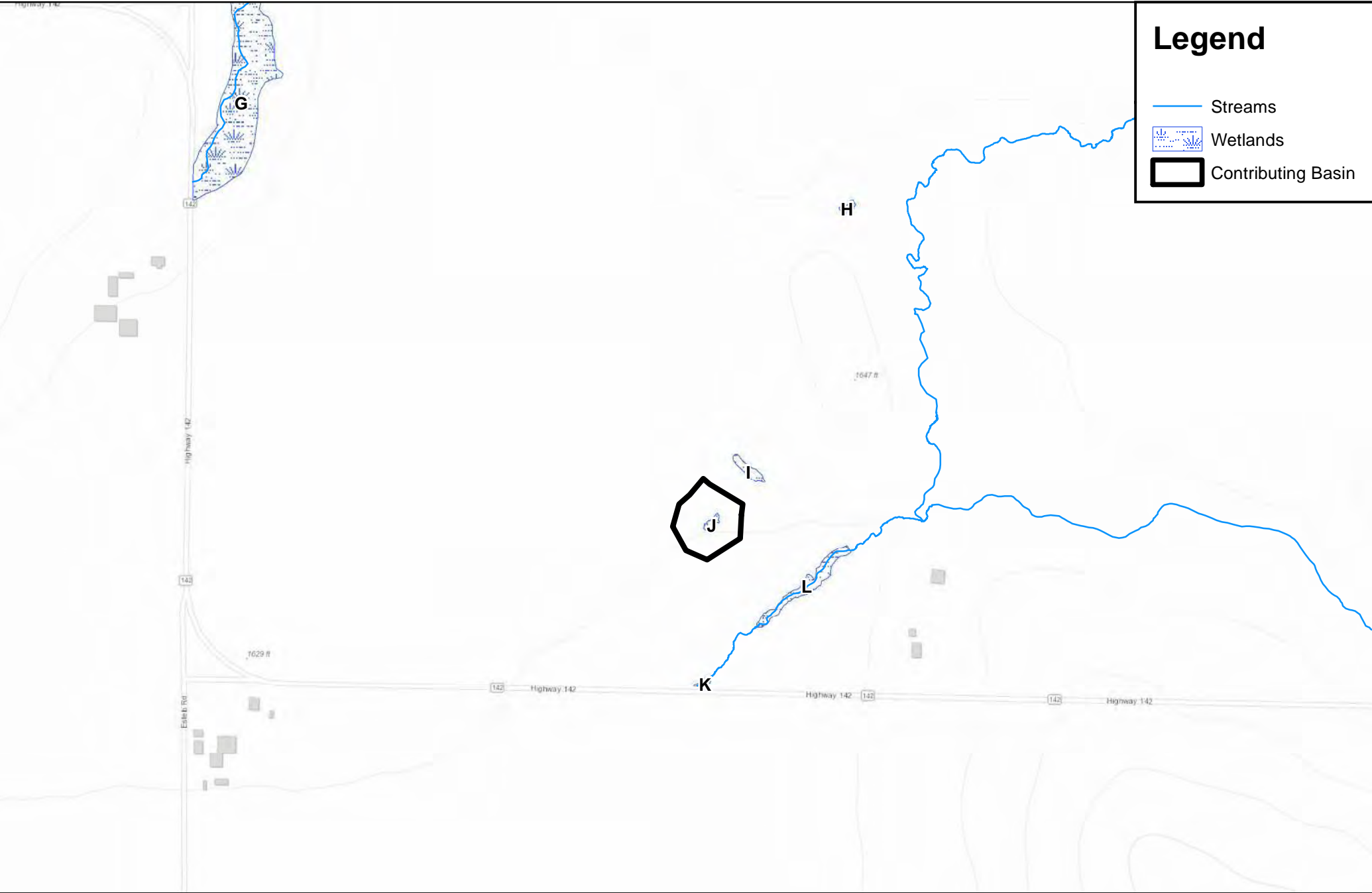
Occasionally Flooded or Inundated

Saturated Only



Figure 2. Wetland J Hydroperiods  
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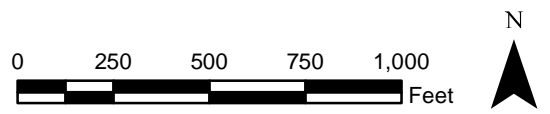




### Legend

- Streams
- Wetlands
- Contributing Basin

Figure 3. Wetland J Contributing Basin  
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# Legend

- WDNR Streams
- Wetlands
- Land Use Intensity**
  - High
  - Low
  - Moderate

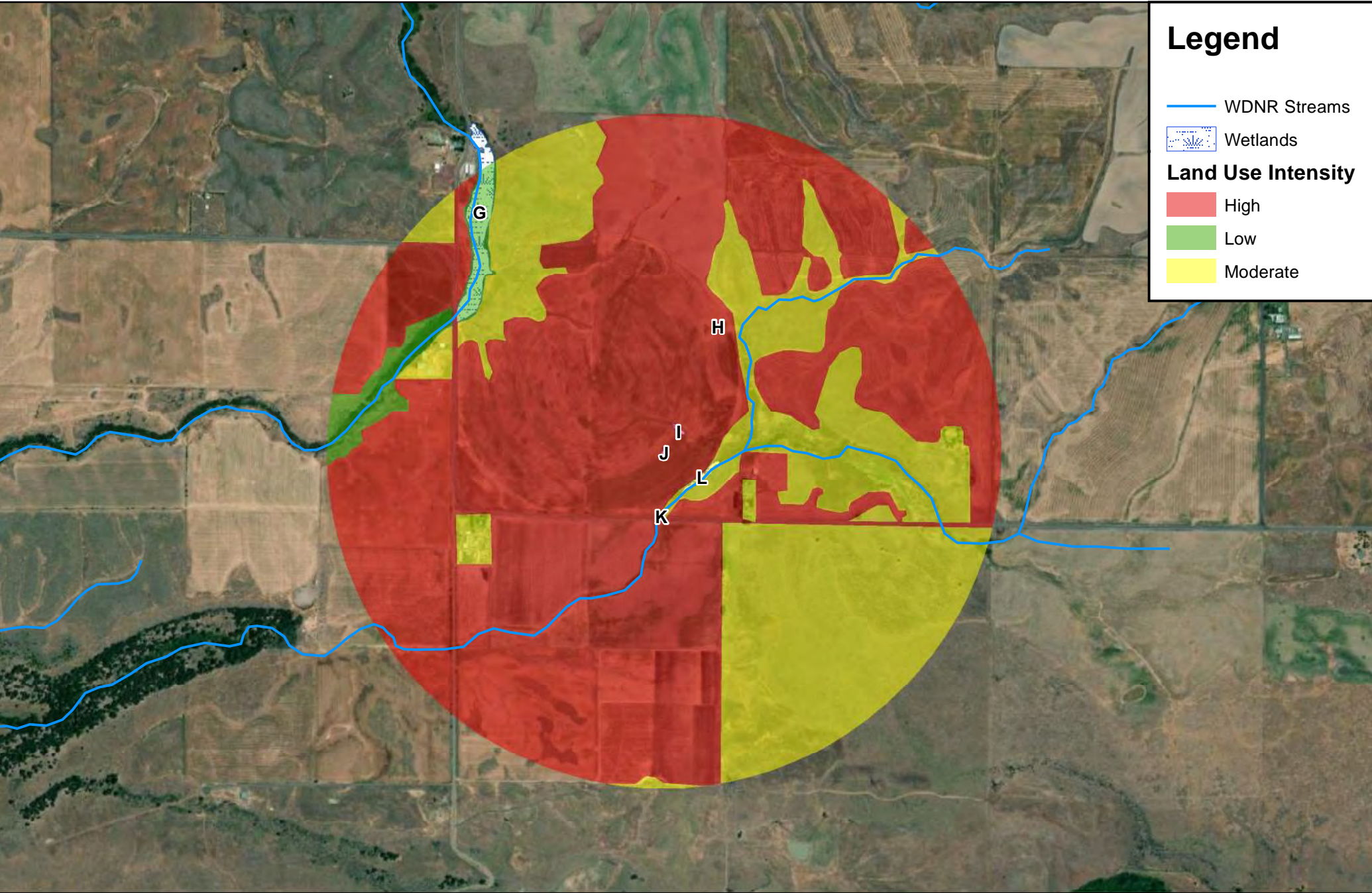
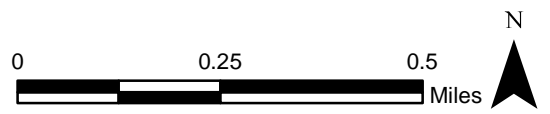


Figure 4. Wetland J Land Use and Habitat Map  
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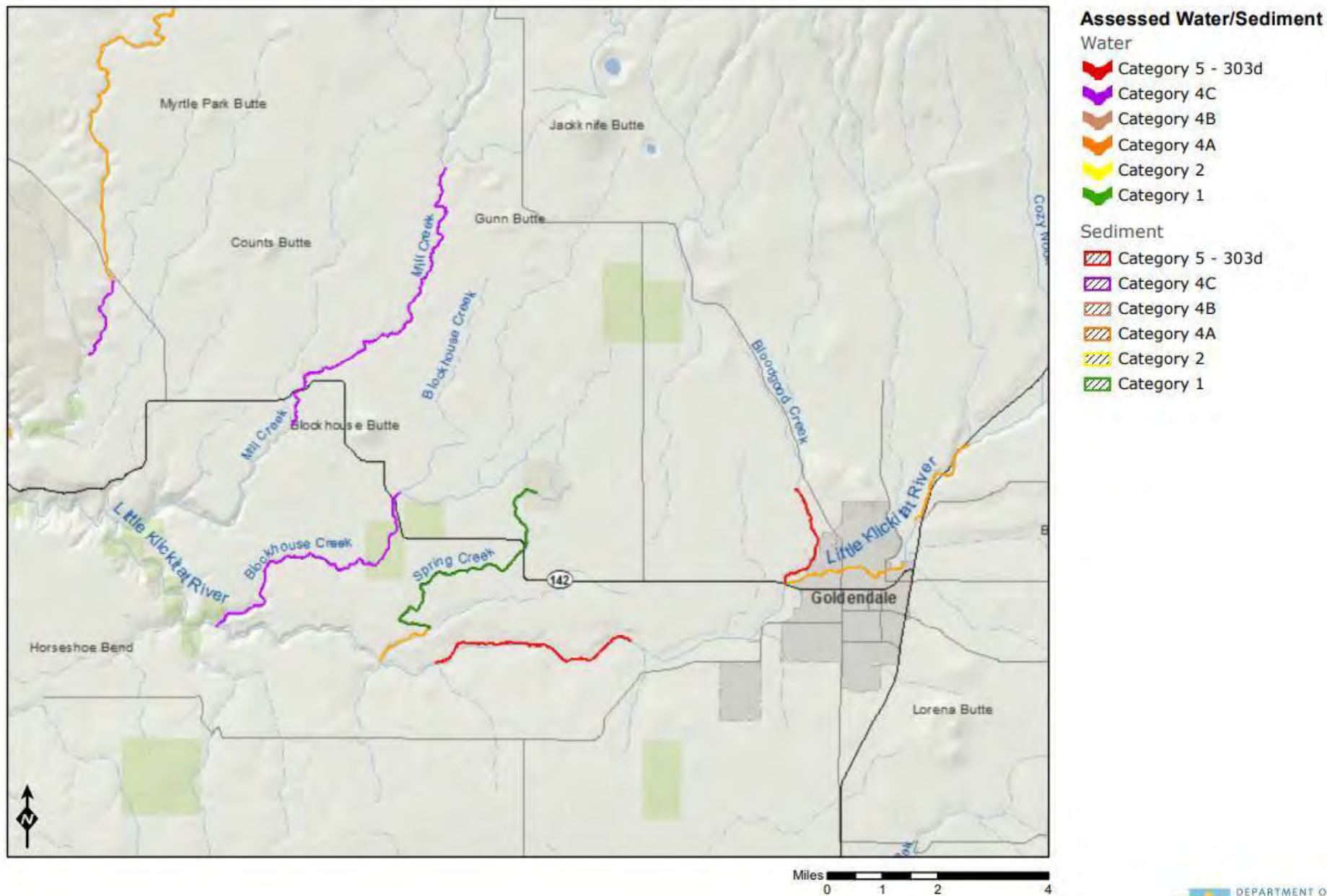


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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Wetland name or number  K

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland K Date of site visit: Desktop  
 Rated by Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY III** (based on functions X or special characteristics \_\_\_\_\_)

### 1. Category of wetland based on FUNCTIONS

- \_\_\_\_\_ Category I – Total score = 22-27
- \_\_\_\_\_ Category II – Total score = 19-21
- X  Category III – Total score = 16-18
- \_\_\_\_\_ Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <b>L</b>	<b>H</b> M L	H <b>M</b> L	
Landscape Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Value	<b>H</b> M L	H <b>M</b> L	H <b>M</b> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	6	7	5	18

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>Not Applicable</b>

Wetland name or number K

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO – go to 2**

**YES – The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

NO - go to 3

**YES – The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

NO - go to 4

**YES – The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO – go to 5**

**YES – The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number K

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number \_\_\_\_\_

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover $> \frac{1}{3}$ area of wetland Depressions cover $> \frac{1}{10}$ area of wetland Depressions present but cover $< \frac{1}{10}$ area of wetland <b>No depressions present</b>	points = 6 points = 3 points = 1 <b>points = 0</b>	0
R 1.2. Structure of plants in the wetland (areas with $> 90\%$ cover at person height; <b>not</b> Cowardin classes): Forest or shrub $> \frac{2}{3}$ the area of the wetland Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland <b>Ungrazed herbaceous plants <math>\frac{1}{3} - \frac{2}{3}</math> area of wetland</b> Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 10 points = 5 points = 5 <b>points = 2</b> points = 0	2
Total for R 1	Add the points in the boxes above	2

**Rating of Site Potential** If score is:      12-16 = H      6-11 = M   X   0-5 = L

*Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 <b>No = 0</b>	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 <b>No = 0</b>	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<b>Yes = 1</b> No = 0	1
R 2.4. Is $> 10\%$ of the area within 150 ft of wetland in land uses that generate pollutants	<b>Yes = 1</b> No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source _____	Yes = 1 <b>No = 0</b>	0
Total for R 2	Add the points in the boxes above	2

**Rating of Landscape Potential** If score is:      3-6 = H   X   1 or 2 = M      0 = L

*Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 <b>No = 0</b>	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 <b>No = 0</b>	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>YES if there is a TMDL for the drainage in which wetland is found.</i>	<b>Yes = 2</b> No = 0	2
Total for R 3	Add the points in the boxes above	2

**Rating of Value** If score is:   X   2-4 = H      1 = M      0 = L

*Record the rating on the first page*

**RIVERINE WETLANDS**Points  
(only 1 score  
per box)**Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion

## R 4.0. Does the site have the potential to reduce flooding and erosion?

## R 4.1. Characteristics of the overbank storage the wetland provides:

*Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*

If the ratio is more than 2

points = 10

10

If the ratio is 1-2

points = 8

If the ratio is ½-&lt;1

points = 4

If the ratio is ¼-&lt; ½

points = 2

If the ratio is &lt; ¼

points = 1

R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*Forest or shrub for more than  $\frac{2}{3}$  the area of the wetland

points = 6

4

Forest or shrub for  $>\frac{1}{3}$  area OR emergent plants  $>\frac{2}{3}$  area

points = 4

Forest or shrub for  $>\frac{1}{10}$  area OR emergent plants  $>\frac{1}{3}$  area

points = 2

Plants do not meet above criteria

points = 0

Total for R 5

Add the points in the boxes above

14

**Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

## R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

## R 5.1. Is the stream or river adjacent to the wetland downcut?

Yes = 0 No = 1

1

## R 5.2. Does the up-gradient watershed include a UGA or incorporated area?

Yes = 1 No = 0

0

## R 5.3. Is the up-gradient stream or river controlled by dams?

Yes = 0 No = 1

1

Total for R 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is: \_\_\_ 3 = H X 1 or 2 = M \_\_\_ 0 = L

Record the rating on the first page

## R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.*

The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources

points = 2

1

Surface flooding problems are in a basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

## R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for R 6

Add the points in the boxes above

1

**Rating of Value** If score is: \_\_\_ 2-4 = H X 1 = M \_\_\_ 0 = L

Record the rating on the first page





Wetland name or number K

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	7

**Rating of Site Potential** If score is: 15-18 = H X 7-14 = M 0-6 = L Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>4.7</u> = <u>4.7</u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>18.8</u> = <u>18.8</u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 No = 0</p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is: 4-9 = H 1-3 = M X < 1 = L Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <u>Site has 1 or 2 priority habitats within 100 m (see Appendix B)</u> points = 1            Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is: 2 = H X 1 = M 0 = L Record the rating on the first page

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>   <b>No = Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b>   No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b>   No = <b>Category III</b></span></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>   <b>No = Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b>   <b>No – Go to SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b>   <b>No = Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b>   <b>No = Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b>   <b>No = Not a WHCV</b></span></p>	<b>Cat. I</b>

Wetland name or number \_\_\_\_\_

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">N/A</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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Wetland name or number L

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): L Date of site visit: 7/24/2021  
 Rated by Brandon Stimac and Bridget Wojtala Trained by Ecology?  Yes  No Date of training Oct. 2020  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

**OVERALL WETLAND CATEGORY** Cat. III (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H M <input type="radio"/> L	<input type="radio"/> H M L	H <input type="radio"/> M L	
Landscape Potential	<input type="radio"/> H M L	H <input type="radio"/> M L	H M <input type="radio"/> L	
Value	<input type="radio"/> H M L	<input type="radio"/> H M L	H <input type="radio"/> M L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	5	8	5	<b>18</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>X</b>

Wetland name or number     L    

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	1
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	1-2
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?

The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size  
 At least 30% of the open water area is deeper than 10 ft (3 m)

**NO** - go to 2

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?

The wetland is on a slope (*slope can be very gradual*),  
 The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;  
 The water leaves the wetland **without being impounded**.

**NO** - go to 3

**YES** - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;  
 The overbank flooding occurs at least once every 10 years.

**NO** - go to 4

**YES** - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO** - go to 5

**YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number     L    

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number     L    

<b>RIVERINE WETLANDS</b>		Points (only 1 score per box)
<b>Water Quality Functions - Indicators that the site functions to improve water quality</b>		
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover $> \frac{1}{3}$ area of wetland Depressions cover $> \frac{1}{10}$ area of wetland Depressions present but cover $< \frac{1}{10}$ area of wetland <u>No depressions present</u>	points = 6 points = 3 points = 1 <u>points = 0</u>	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; <b>not</b> Cowardin classes): Forest or shrub $> \frac{2}{3}$ the area of the wetland Forest or shrub $\frac{1}{3} - \frac{2}{3}$ area of the wetland Ungrazed, herbaceous plants $> \frac{2}{3}$ area of wetland <u>Ungrazed herbaceous plants <math>\frac{1}{3} - \frac{2}{3}</math> area of wetland</u> Forest, shrub, and ungrazed herbaceous $< \frac{1}{3}$ area of wetland	points = 10 points = 5 points = 5 <u>points = 2</u> points = 0	2
Total for R 1	Add the points in the boxes above	2

**Rating of Site Potential** If score is:      12-16 = H      6-11 = M   X   0-5 = L

*Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?		
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 <u>No = 0</u>	0
R 2.2. Does the contributing basin include a UGA or incorporated area?	Yes = 1 <u>No = 0</u>	0
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	<u>Yes = 1</u> No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants	<u>Yes = 1</u> No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source _____	Yes = 1 <u>No = 0</u>	0
Total for R 2	Add the points in the boxes above	2

**Rating of Landscape Potential** If score is:      3-6 = H   X   1 or 2 = M      0 = L

*Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?		
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?	Yes = 1 <u>No = 0</u>	0
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 <u>No = 0</u>	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the drainage in which wetland is found.</i>	Yes = 2 No = 0	0
Total for R 3	Add the points in the boxes above	2

**Rating of Value** If score is:   X   2-4 = H      1 = M      0 = L

*Record the rating on the first page*

Wetland name or number     L    

### RIVERINE WETLANDS

Points  
(only 1 score  
per box)

#### Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides:

*Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*

If the ratio is more than 2

points = 10

If the ratio is 1-2

points = 8

If the ratio is 1/2-<1

points = 4

If the ratio is 1/4-< 1/2

points = 2

If the ratio is < 1/4

points = 1

10

R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*

Forest or shrub for more than 2/3 the area of the wetland

points = 6

Forest or shrub for >1/3 area OR emergent plants > 2/3 area

points = 4

Forest or shrub for > 1/10 area OR emergent plants > 1/3 area

points = 2

Plants do not meet above criteria

points = 0

4

Total for R 5

Add the points in the boxes above

16

**Rating of Site Potential** If score is: X 12-16 = H \_\_\_ 6-11 = M \_\_\_ 0-5 = L

Record the rating on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

R 5.1. Is the stream or river adjacent to the wetland downcut?

Yes = 0 No = 1

1

R 5.2. Does the up-gradient watershed include a UGA or incorporated area?

Yes = 1 No = 0

0

R 5.3. Is the up-gradient stream or river controlled by dams?

Yes = 0 No = 1

1

Total for R 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is: \_\_\_ 3 = H X 1 or 2 = M \_\_\_ 0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.*

The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources

points = 2

Surface flooding problems are in a basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

2

R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0


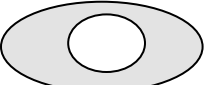
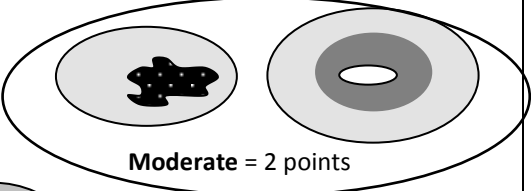
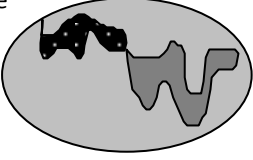
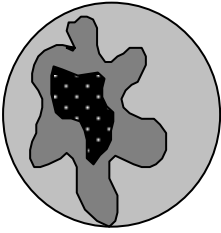
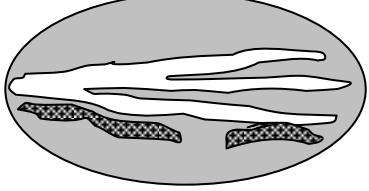
Total for R 6

Add the points in the boxes above

2

**Rating of Value** If score is: X 2-4 = H \_\_\_ 1 = M \_\_\_ 0 = L

Record the rating on the first page

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input checked="" type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)      4 or more checks: points = 3</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)      3 checks: points = 2</p> <p style="text-align: right;">2 checks: points = 1</p> <p style="text-align: right;">1 check: points = 0</p>	<b>2</b>	
<p><b>H 1.2.</b> Is one of the vegetation types Aquatic Bed?      Yes = 1    No = 0</p>	<b>0</b>	
<p><b>H 1.3.</b> <u>Surface water</u></p> <p>H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i>      Yes = 3 points &amp; go to H 1.4    No = go to H 1.3.2</p> <p>H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i>      Yes = 3    No = 0</p>	<b>3</b>	
<p><b>H 1.4.</b> <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>  8  </u></p> <p style="text-align: right;">Scoring: <math>&gt; 9</math> species: points = 2</p> <p style="text-align: right;">4-9 species: points = 1</p> <p style="text-align: right;"><math>&lt; 4</math> species: points = 0</p>	<b>1</b>	
<p><b>H 1.5.</b> <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>None</b> = 0 points</p> </div> <div style="text-align: center;">  <p><b>Low</b> = 1 point</p> </div> <div style="text-align: center;">  <p><b>Moderate</b> = 2 points</p> </div> </div> <p>All three diagrams in this row are <b>High</b> = 3 points</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Riparian braided channels with 2 classes</p> </div> </div>	<b>Figure 1</b>  <b>2</b>	

Wetland name or number     L    

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	0
<p>Total for H 1</p>	8

**Rating of Site Potential** If score is:      15-18 = H   X   7-14 = M      0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  4.7  </u> = <u>  4.7  </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  18.6  </u> = <u>  18.6  </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i> Hatchery is upstream Yes = 3 <u>No = 0</u></p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is:      4-9 = H      1-3 = M   X   < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <u>Site has 1 or 2 priority habitats within 100 m (see Appendix B)</u> points = 1            Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is:      2 = H   X   1 = M      0 = L *Record the rating on the first page*

## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

<b>Wetland Type</b>	<b>Category</b>
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>    No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b>    No = <b>Not a vernal pool with special characteristics</b></span></p> <p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b>    No = <b>Category III</b></span></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>    No = <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b>    No – Go to <b>SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b>    No = <b>Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b>    No = <b>Not a WHCV</b></span></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p>Cat. I</p> <p>Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>Cat. I</p> <p>Cat. I</p> <p>Cat. II</p> <p>Cat. II</p> <p>N/A</p>
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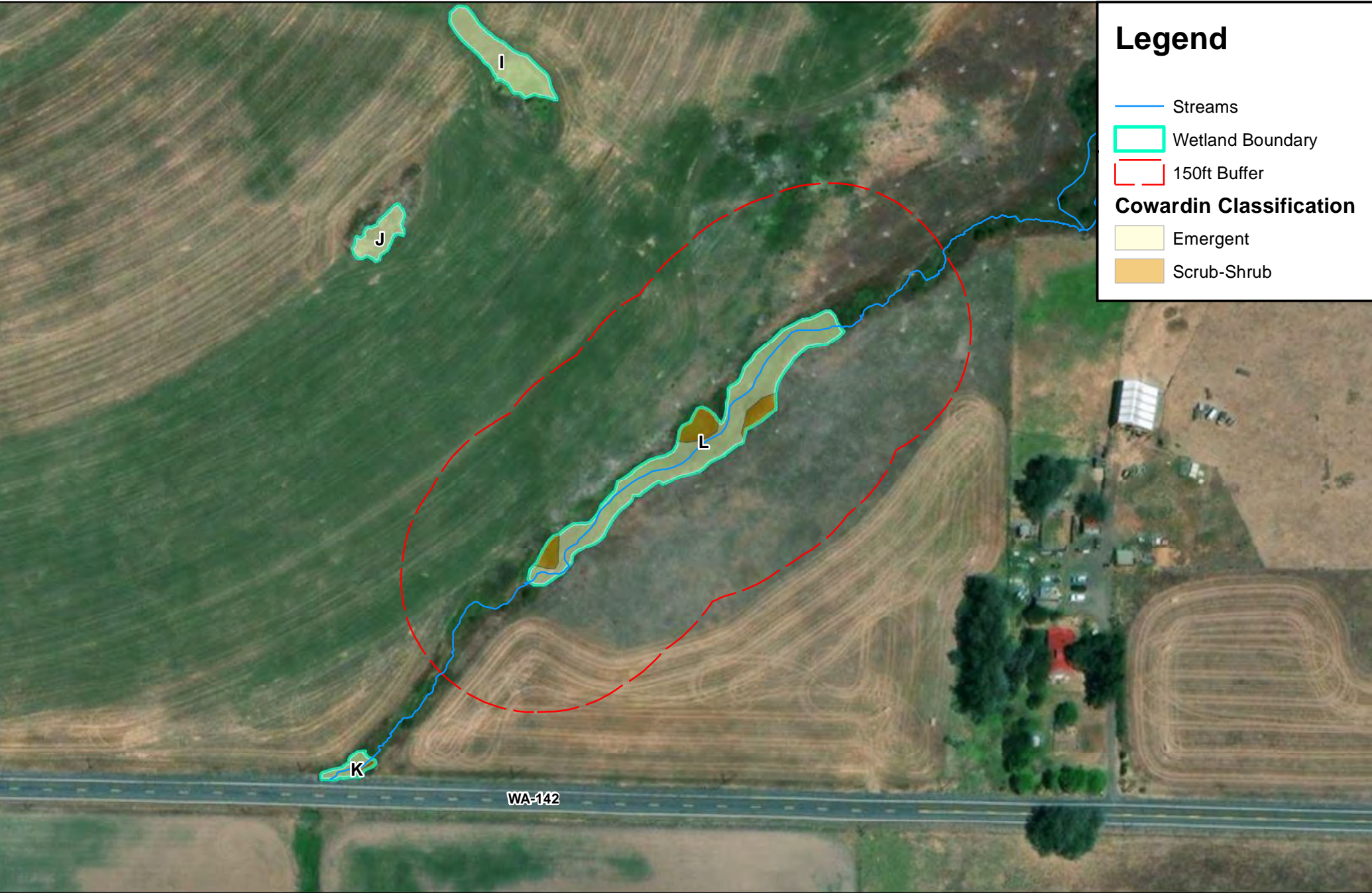
# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

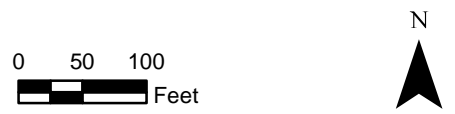
Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



**Figure 1. Wetland L Cowardin Classifications**  
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# Legend




- Streams
- Wetland Boundary
- Hydroperiods**
  - Occasionally Flooded or Inundated
  - Saturated Only

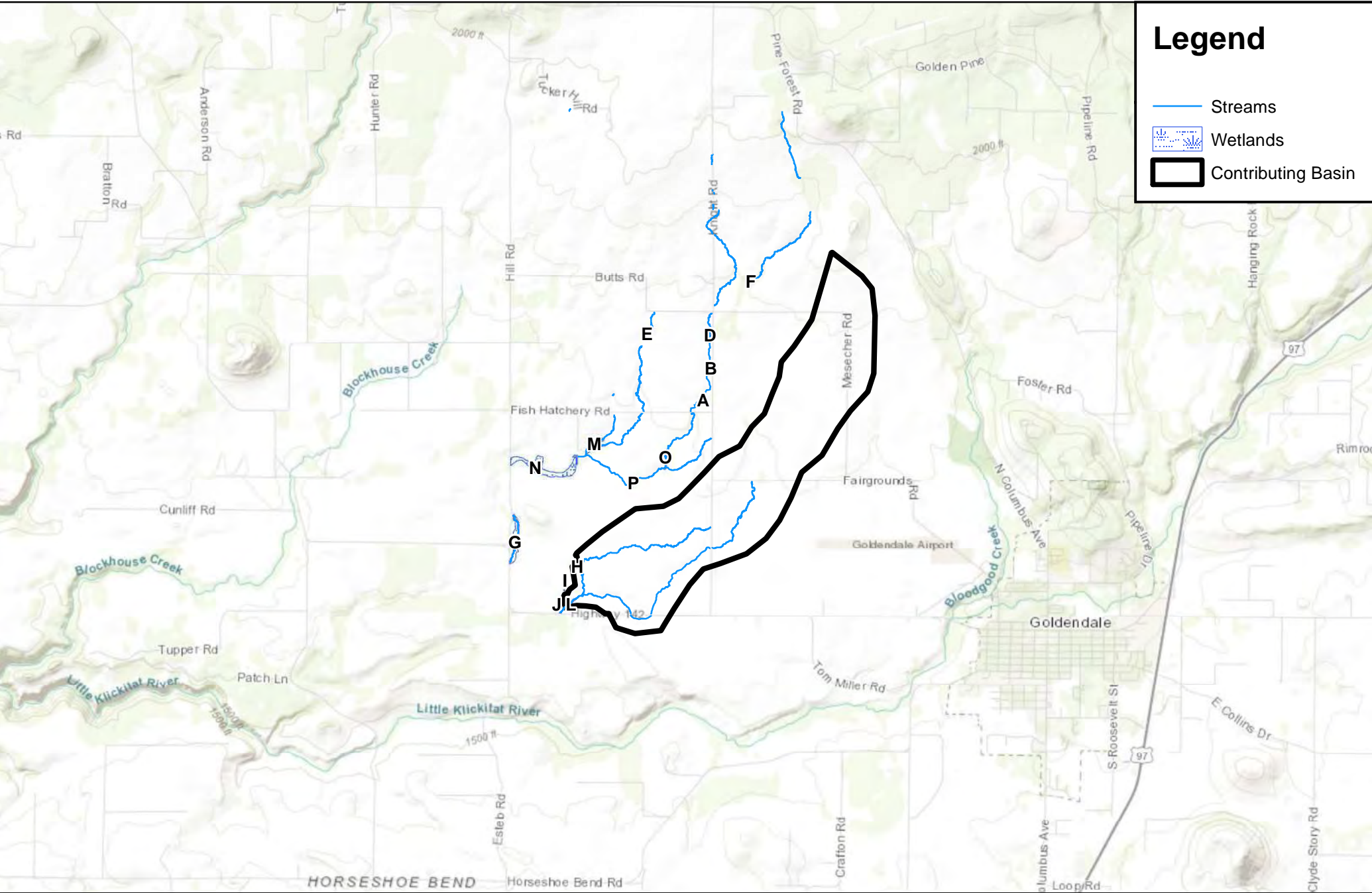


Figure 2. Wetland L Hydroperiods  
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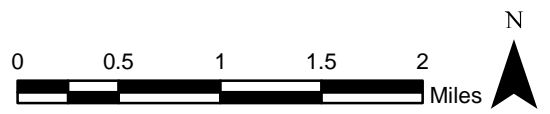


### Legend

-  Streams
-  Wetlands
-  Contributing Basin



**Figure 3. Wetland L Contributing Basin**  
 Carriger Solar, LLC | Wetland Ratings | August 2021



# Legend

- WDNR Streams
- Wetlands
- Land Use Intensity**
  - High
  - Low
  - Moderate

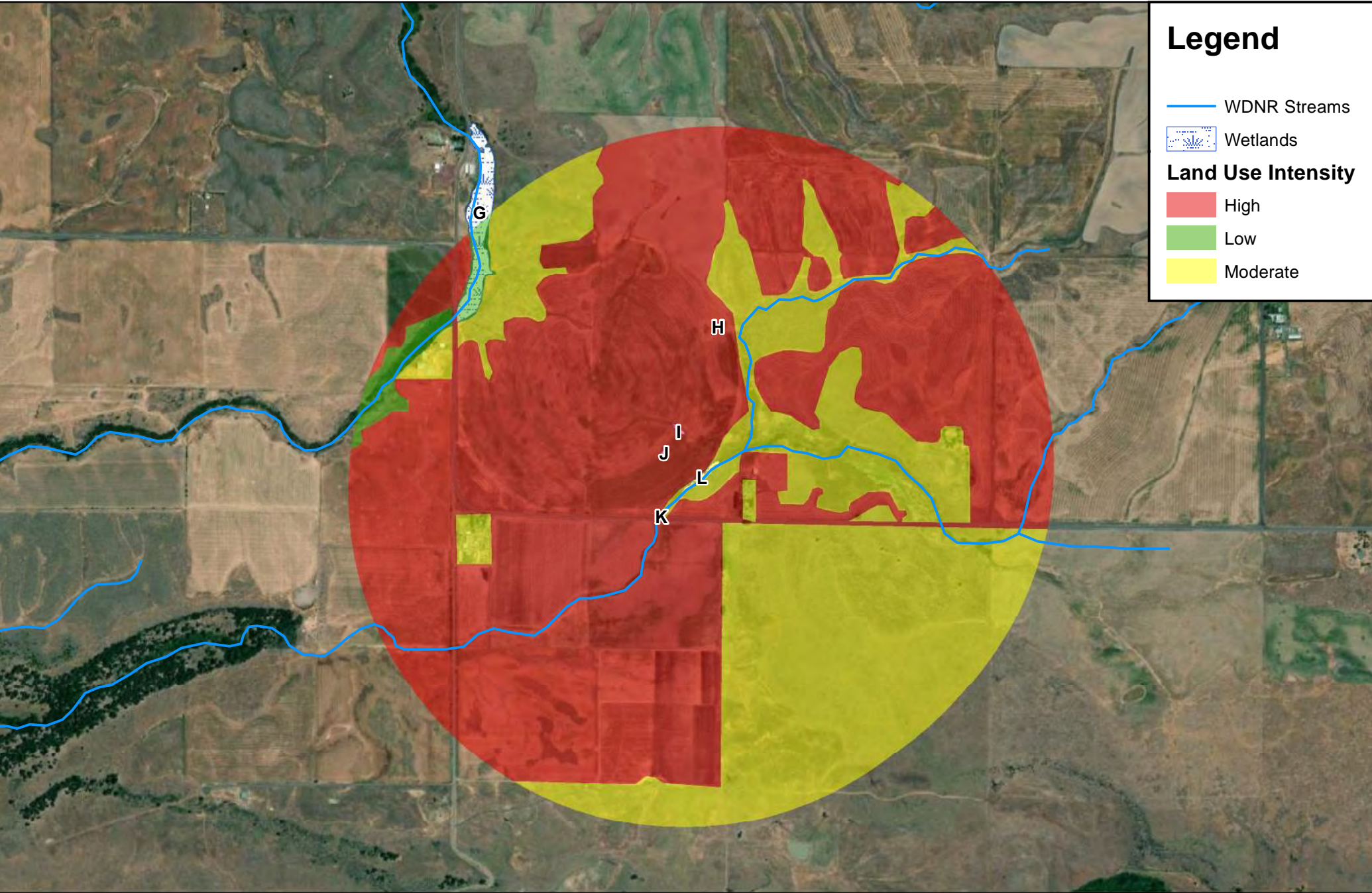
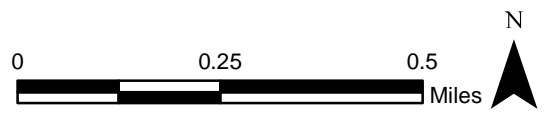


Figure 4. Wetland L Land Use and Habitat Map  
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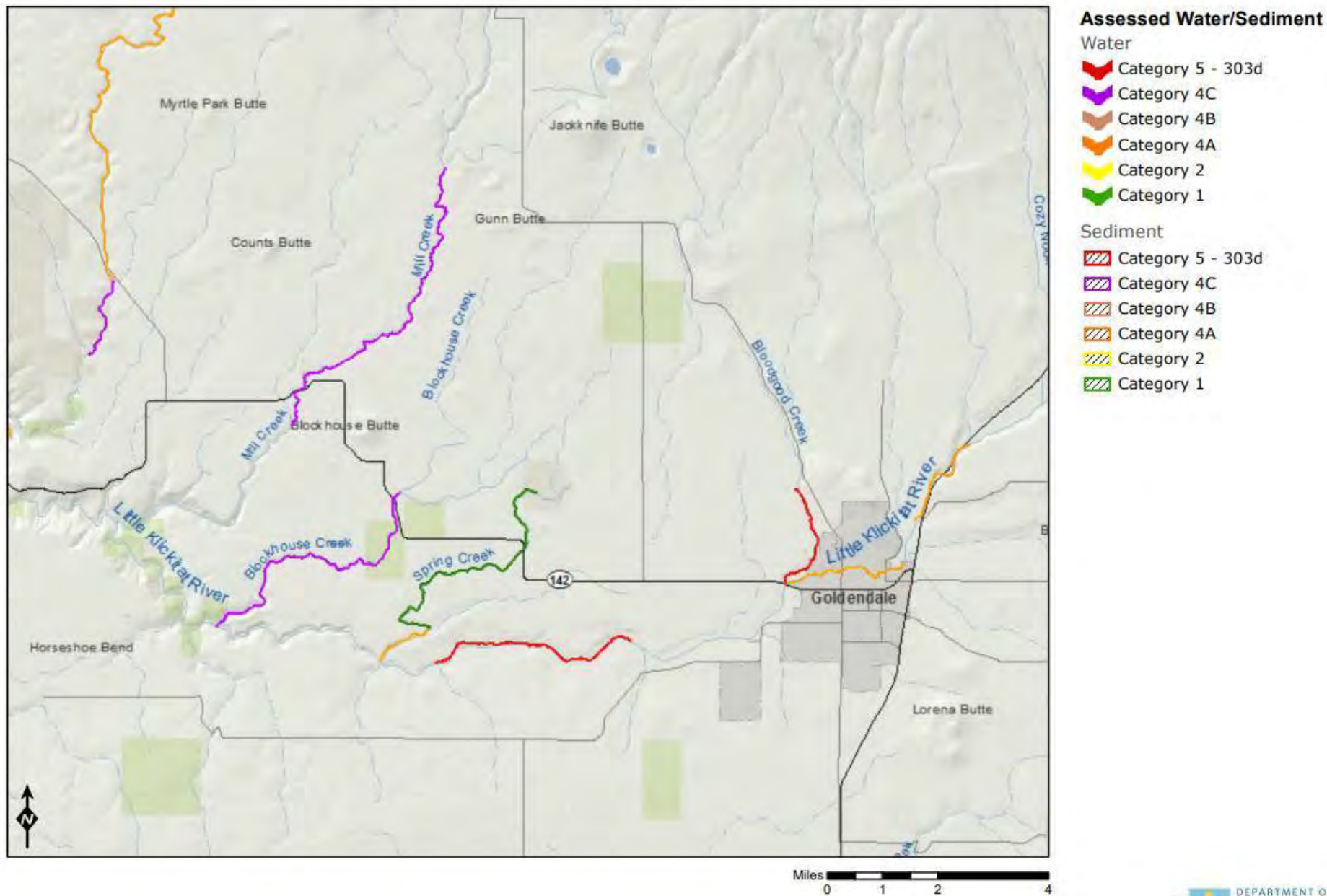


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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Wetland name or number  M

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):  M  Date of site visit:  7/24/2021   
 Rated by  Brandon Stimac and Bridget Wojtala  Trained by Ecology?  Yes  No Date of training  Oct. 2020   
 HGM Class used for rating  Depressional  Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map  ESRI

### OVERALL WETLAND CATEGORY Cat. III (based on functions or special characteristics )

#### 1. Category of wetland based on FUNCTIONS

- Category I** – Total score = 22-27  
 **Category II** – Total score = 19-21  
 **Category III** – Total score = 16-18  
 **Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="radio"/> <input checked="" type="radio"/> L	H <input type="radio"/> <input checked="" type="radio"/> L	H <input type="radio"/> <input checked="" type="radio"/> L	
Landscape Potential	H <input type="radio"/> <input checked="" type="radio"/> L	H <input type="radio"/> <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	
Value	<input checked="" type="radio"/> H M L	H <input type="radio"/> <input checked="" type="radio"/> L	H <input type="radio"/> <input checked="" type="radio"/> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>18</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H  
 8 = H,H,M  
 7 = H,H,L  
 7 = H,M,M  
 6 = H,M,L  
 6 = M,M,M  
 5 = H,L,L  
 5 = M,M,L  
 4 = M,L,L  
 3 = L,L,L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
	<i>Circle the appropriate category</i>	
<b>Vernal Pools</b>	<b>II</b>	<b>III</b>
<b>Alkali</b>	<b>I</b>	
<b>Wetland of High Conservation Value</b>	<b>I</b>	
<b>Bog and Calcareous Fens</b>	<b>I</b>	
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>	
<b>Aspen Forest</b>	<b>I</b>	
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>	
<b>Floodplain forest</b>	<b>II</b>	
<b>None of the above</b>	<b>X</b>	



Wetland name or number     M    

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
  - At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

**YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?
- The wetland is on a slope (*slope can be very gradual*),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
  - The water leaves the wetland **without being impounded**.

NO - go to 3

**YES** - The wetland class is **Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
  - The overbank flooding occurs at least once every 10 years.

NO - go to 4

**YES** - The wetland class is **Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 5

**YES** - The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number     M    

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
<del>Slope + Lake Fringe</del>	<del>Lake Fringe</del>
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number     M    

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland has <u>no surface water outlet</u>	points = 5	3
Wetland has an <u>intermittently flowing outlet</u>	points = 3	
Wetland has a <u>highly constricted permanently flowing outlet</u>	points = 3	
Wetland has a <u>permanently flowing, unconstricted, surface outlet</u>	points = 1	
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )		
	YES = 3 <u>NO = 0</u>	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)		
Wetland has <u>persistent, ungrazed, vegetation for &gt; 2/3 of area</u>	points = 5	3
Wetland has <u>persistent, ungrazed, vegetation from 1/3 to 2/3 of area</u>	points = 3	
Wetland has <u>persistent, ungrazed vegetation from 1/10 to &lt; 1/3 of area</u>	points = 1	
Wetland has <u>persistent, ungrazed vegetation &lt; 1/10 of area</u>	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area <u>seasonally ponded is &gt; 1/2 total area of wetland</u>	points = 3	1
Area <u>seasonally ponded is 1/4 - 1/2 total area of wetland</u>	points = 1	
Area <u>seasonally ponded is &lt; 1/4 total area of wetland</u>	points = 0	
Total for D 1		7

**Rating of Site Potential** If score is:      12- 16 = H   X   6- 11 = M      0- 5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1 <u>No = 0</u>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<u>Yes = 1</u> No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions		
D 2.1- D 2.3? Source _____	Yes = 1 <u>No = 0</u>	0
Total for D 2		2

**Rating of Landscape Potential** If score is:      3 or 4 = H   X   1 or 2 = M      0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 <u>No = 0</u>	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	<u>Yes = 1</u> No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	<u>Yes = 2</u> No = 0	2
Total for D 3		3

**Rating of Value** If score is:   X   2-4 = H      1 = M      0 = L *Record the rating on the first page*

Wetland name or number     M    

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- |   |                   |          |
|---|-------------------|----------|
| Wetland has no surface water outlet   | points = 8        | <b>4</b> |
| <u>Wetland has an intermittently flowing outlet</u>   | <u>points = 4</u> |          |
| Wetland has a highly constricted permanently flowing outlet   | points = 4        |          |
| Wetland has a permanently flowing unconstricted surface outlet                                      | points = 0        |          |
| <i>(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")</i> |                   |          |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).*

- |   |                   |          |
|---|-------------------|----------|
| Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding        | points = 8        | <b>4</b> |
| Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding | points = 6        |          |
| The wetland is a headwater wetland  | points = 4        |          |
| <u>Seasonal ponding: 1 ft - &lt; 2 ft</u>   | <u>points = 4</u> |          |
| Seasonal ponding: 6 in - < 1 ft   | points = 2        |          |
| Seasonal ponding: < 6 in or wetland has only saturated soils  | points = 0        |          |

Total for D 4 Add the points in the boxes above **8**

**Rating of Site Potential** If score is:     12-16 = H       X  6-11 = M         0-5 = L     *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

- |  |                       |          |
|--|-----------------------|----------|
| D 5.1. Does the wetland receive stormwater discharges?   | Yes = 1 <u>No = 0</u> | <b>0</b> |
| D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?            | <u>Yes = 1</u> No = 0 | <b>1</b> |
| D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? | <u>Yes = 1</u> No = 0 | <b>1</b> |
| Total for D 5 <span style="float: right;">Add the points in the boxes above</span>                       |                       | <b>2</b> |

**Rating of Landscape Potential** If score is:     3 = H       X  1 or 2 = M         0 = L     *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.*

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

- |   |                   |          |
|---|-------------------|----------|
| Flooding occurs in sub-basin that is immediately down-gradient of wetland | points = 2        | <b>1</b> |
| Surface flooding problems are in a sub-basin farther down-gradient        | <u>points = 1</u> |          |

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

*Explain why* \_\_\_\_\_ points = 0

There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 **0**

Total for D 6 Add the points in the boxes above **1**

**Rating of Value** If score is:     2-4 = H       X  1 = M         0 = L     *Record the rating on the first page*



Wetland name or number     M    

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input checked="" type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input checked="" type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	3
<p>Total for H 1</p>	10

**Rating of Site Potential** If score is:     15-18 = H         X         7-14 = M         0-6 = L     Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>    3.7    </u> + [(% moderate and low intensity land uses)/2] <u>    12.7    </u> = <u>    16.4    </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon <u>    points = 1    </u>  <u>    &lt;10% of 1km Polygon    </u> points = 0</p>	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>    0    </u> + [(% moderate and low intensity land uses)/2] <u>    20.9    </u> = <u>    20.9    </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>    Undisturbed habitat 10 - 50% and &gt; 3 patches    </u> <u>    points = 1    </u>            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>    &gt; 50% of Polygon is high intensity land use    </u> <u>    points = (-2)    </u>            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 <u>    No = 0    </u></p>	0
<p>Total for H 2</p>	0

**Rating of Landscape Potential** If score is:     4-9 = H         1-3 = M         X         < 1 = L     Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <u>    Site has 1 or 2 priority habitats within 100 m (see Appendix B)    </u> <u>    points = 1    </u>            Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is:     2 = H         X         1 = M         0 = L     Record the rating on the first page

**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p>	
<p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      — The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.                      — Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p align="center"><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      — The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      — Salt encrustations around more than 75% of the edge of the wetland                      — More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<p align="center"><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p align="center"><b>Cat. I</b></p>



<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p>	
<p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p>	<p style="text-align: center;">Cat. I</p>
<p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p>	<p style="text-align: center;">Cat. I</p>
<p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p>	<p style="text-align: center;">Cat. II</p>
<p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p>	<p style="text-align: center;">Cat. II</p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">N/A</p>

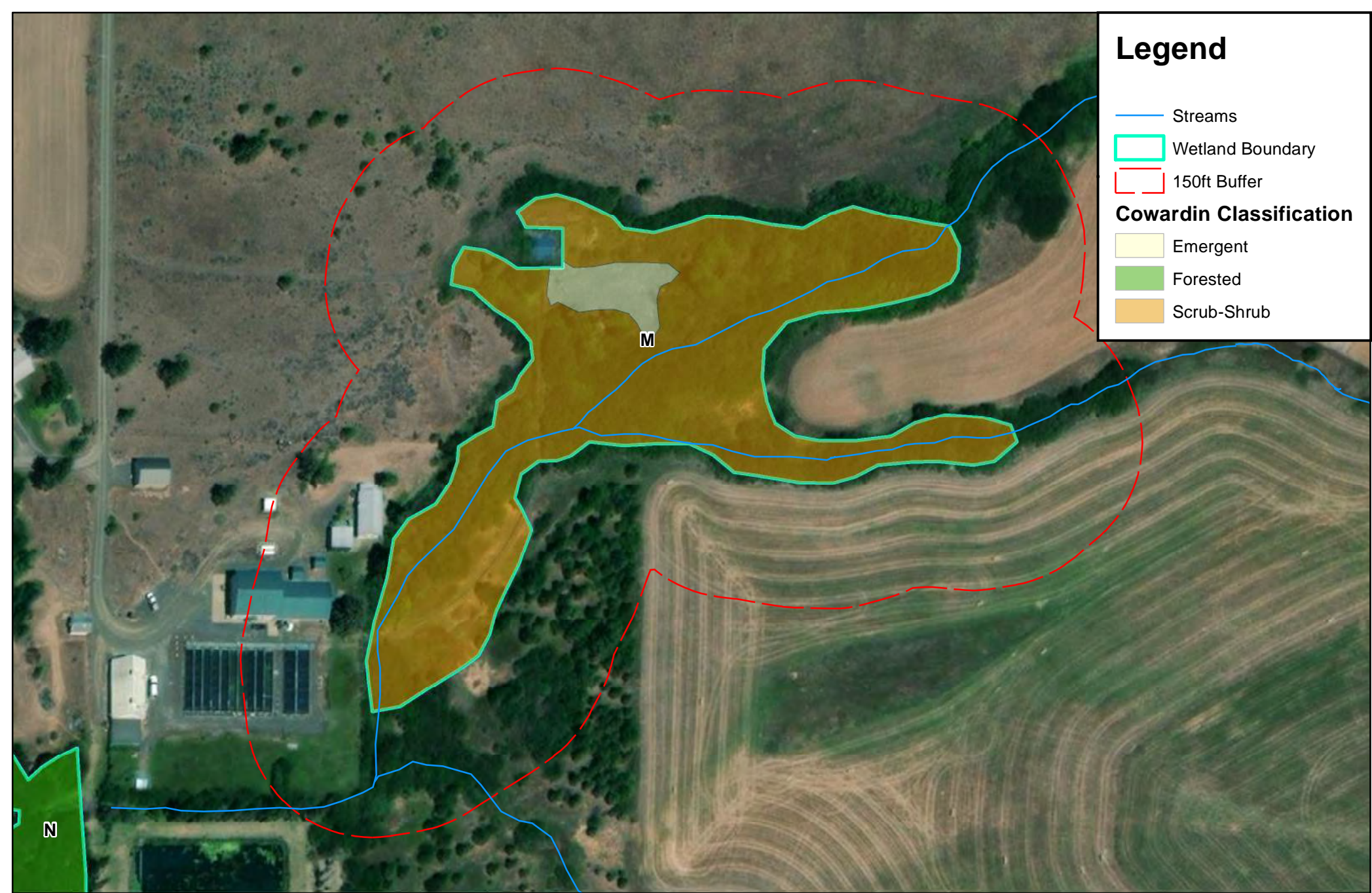
# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

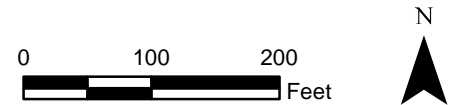
- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



**Figure 1. Wetland M Cowardin Classifications**

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# Legend

— Streams

□ Wetland Boundary

## Hydroperiods

□ Occasionally Flooded or Inundated

□ Permanently Flooded or Inundated




□ Saturated Only

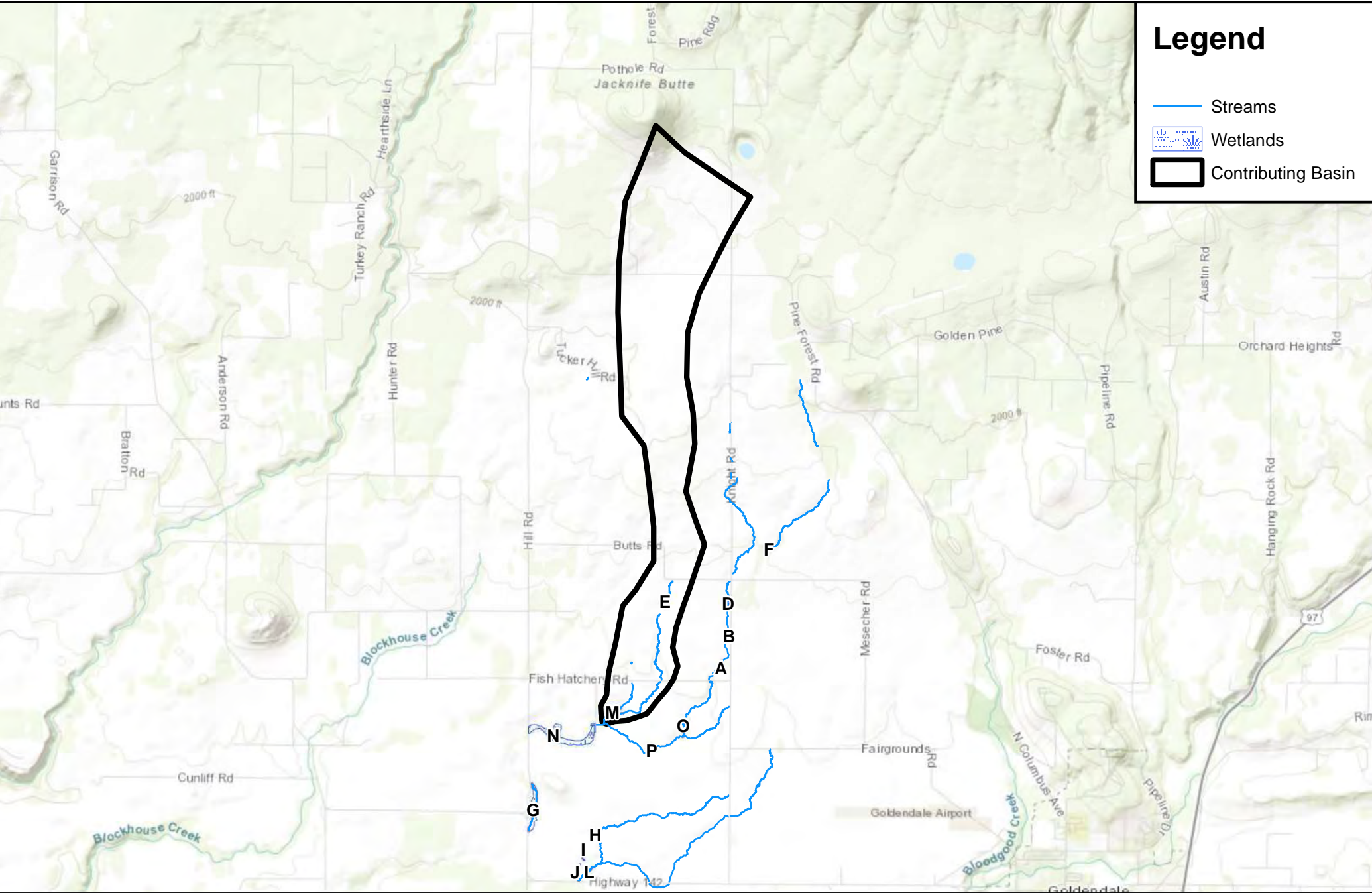


Figure 2. Wetland M Hydroperiods  
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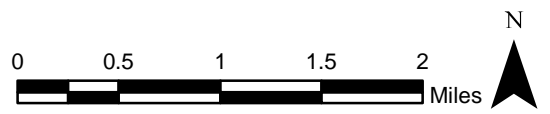


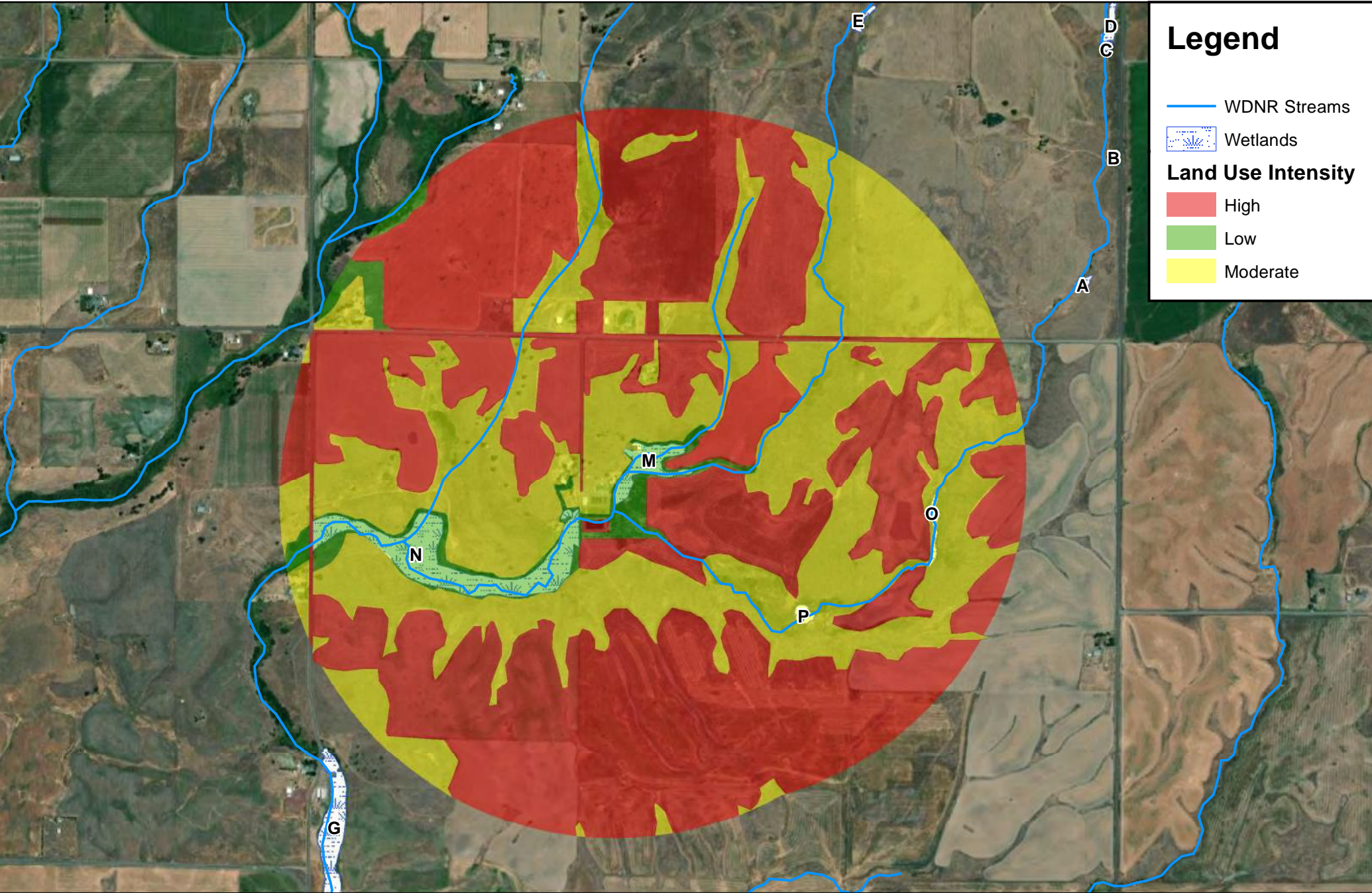
### Legend

-  Streams
-  Wetlands
-  Contributing Basin



**Figure 3. Wetland M Contributing Basin**  
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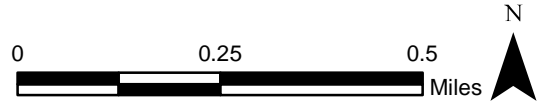
**Legend**

- WDNR Streams
- Wetlands

**Land Use Intensity**

- High
- Low
- Moderate

**Figure 4. Wetland M Land Use and Habitat Map**  
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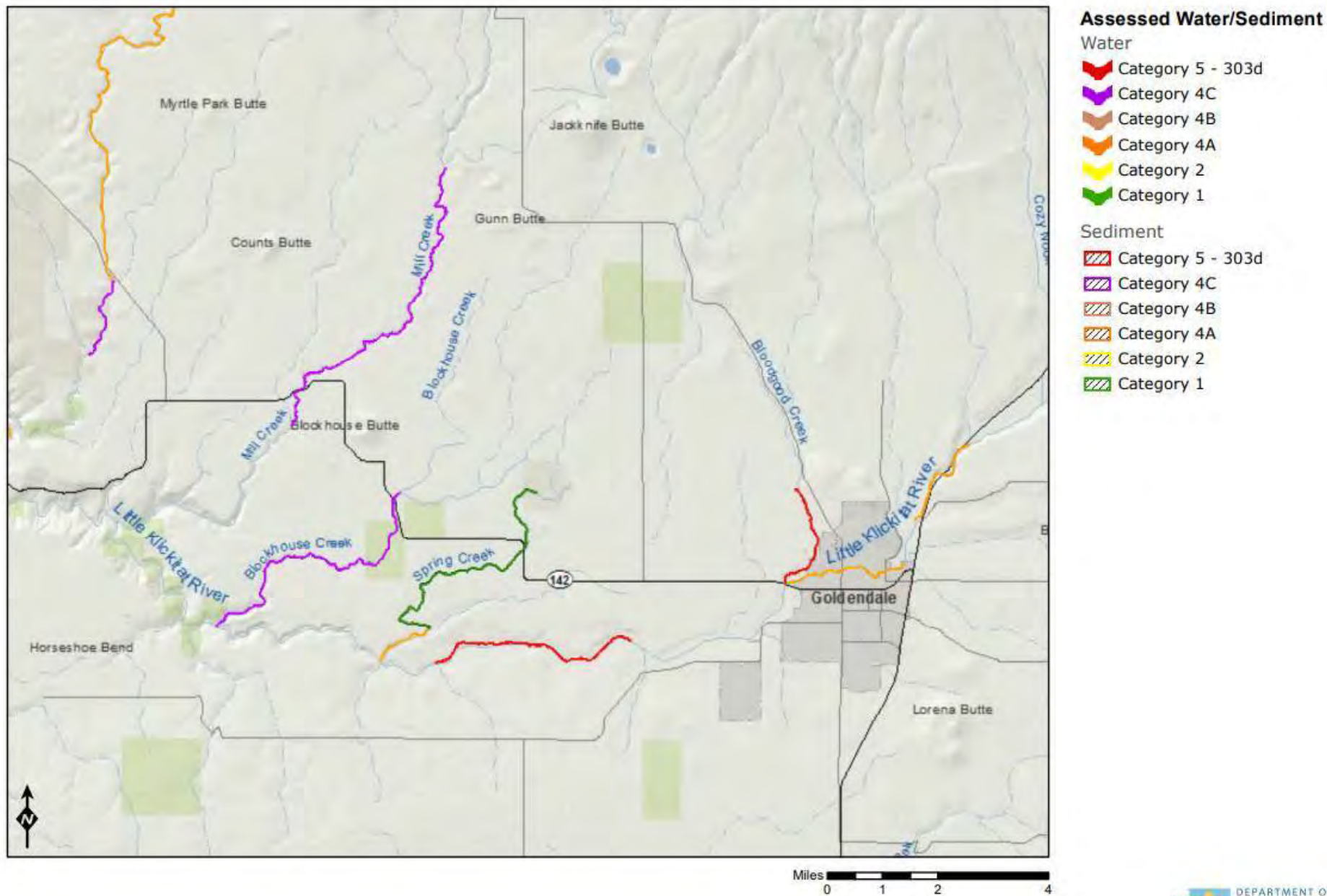


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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Wetland name or number 0

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland O Date of site visit: Desktop  
 Rated by Jess Taylor Trained by Ecology?  Yes  No Date of training \_\_\_\_\_  
 HGM Class used for rating Riverine Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map \_\_\_\_\_

**OVERALL WETLAND CATEGORY** II (based on functions  or special characteristics )

### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- X   Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <b>M</b> L	<b>H</b> M L	H <b>M</b> L	
Landscape Potential	H <b>M</b> L	H <b>M</b> L	H M <b>L</b>	
Value	<b>H</b> M L	H <b>M</b> L	H <b>M</b> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	7	7	5	19

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	

Wetland name or number \_\_\_\_\_

## Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

## Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	



Wetland name or number     

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*



Wetland name or number 0

### RIVERINE WETLANDS

Points  
(only 1 score  
per box)

#### Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?

R 4.1. Characteristics of the overbank storage the wetland provides:

*Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).*

- If the ratio is more than 2 points = 10
- If the ratio is 1-2 points = 8
- If the ratio is ½-<1 points = 4
- If the ratio is ¼-< ½ points = 2
- If the ratio is < ¼ points = 1

10

R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).*

- Forest or shrub for more than <sup>2</sup>/<sub>3</sub> the area of the wetland points = 6
- Forest or shrub for ><sup>1</sup>/<sub>3</sub> area OR emergent plants > <sup>2</sup>/<sub>3</sub> area points = 4
- Forest or shrub for > <sup>1</sup>/<sub>10</sub> area OR emergent plants > <sup>1</sup>/<sub>3</sub> area points = 2
- Plants do not meet above criteria points = 0

6

Total for R 5

Add the points in the boxes above

16

**Rating of Site Potential** If score is:  12-16 = H  6-11 = M  0-5 = L

Record the rating on the first page

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1

1

R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 No = 0

0

R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 No = 1

1

Total for R 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is:  3 = H  1 or 2 = M  0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?

R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.*

- The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources points = 2
- Surface flooding problems are in a basin farther down-gradient points = 1
- No flooding problems anywhere downstream points = 0

1

R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

0

Total for R 6

Add the points in the boxes above

1

**Rating of Value** If score is:  2-4 = H  1 = M  0 = L

Record the rating on the first page







## CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p><b>SC 1.0. Vernal pools</b></p> <p>Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.</li> <li>— Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i></li> <li>— The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.</li> <li>— Surface water is present for less than 120 days during the wet season.</li> </ul> <p style="text-align: right;">Yes – Go to <b>SC 1.1</b>   <b>No = Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?  <span style="float: right;">Yes – Go to <b>SC 1.2</b>   No = <b>Not a vernal pool with special characteristics</b></span></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?  <span style="float: right;">Yes = <b>Category II</b>   No = <b>Category III</b></span></p>	<b>Cat. II</b> <b>Cat. III</b>
<p><b>SC 2.0. Alkali wetlands</b></p> <p>Does the wetland meet <b>one</b> of the following criteria?</p> <ul style="list-style-type: none"> <li>— The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.</li> <li>— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).</li> <li>— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.</li> </ul> <p><b>OR</b> does the wetland unit meet two of the following three sub-criteria?</p> <ul style="list-style-type: none"> <li>— Salt encrustations around more than 75% of the edge of the wetland</li> <li>— More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4</li> <li>— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.</li> </ul> <p style="text-align: right;">Yes = <b>Category I</b>   <b>No = Not an alkali wetland</b></p>	<b>Cat. I</b>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b></p> <p>SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?  <span style="float: right;">Yes – Go to <b>SC 3.2</b>   <b>No – Go to SC 3.3</b></span></p> <p>SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  <span style="float: right;">Yes = <b>Category I</b>   No = <b>Not a WHCV</b></span></p> <p>SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>  <span style="float: right;">Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b>   <b>No = Not a WHCV</b></span></p> <p>SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?  <span style="float: right;">Yes = <b>Category I</b>   <b>No = Not a WHCV</b></span></p>	<b>Cat. I</b>

Wetland name or number \_\_\_\_\_

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> <b>No = Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> <b>No = Is not a calcareous fen</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p>
<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> <b>No = Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> <b>No – Go to SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> <b>No – Go to SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> <b>No – Go to SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> <b>No = Not a forested wetland with special characteristics</b></p>	<p><b>Cat. I</b></p> <p><b>Cat. I</b></p> <p><b>Cat. II</b></p> <p><b>Cat. II</b></p>
<p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p>N/A</p>

# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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Wetland name or number P

## RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): P Date of site visit: 7/24/2021  
 Rated by Brandon Stimac and Bridget Wojtala Trained by Ecology?  Yes  No Date of training Oct. 2020  
 HGM Class used for rating Depressional Wetland has multiple HGM classes?  Y  N

**NOTE: Form is not complete without the figures requested (figures can be combined).**  
 Source of base aerial photo/map ESRI

### OVERALL WETLAND CATEGORY Cat. III (based on functions or special characteristics )

#### 1. Category of wetland based on FUNCTIONS

- Category I – Total score = 22-27
- Category II – Total score = 19-21
- Category III – Total score = 16-18
- Category IV – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L <input checked="" type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L	
Landscape Potential	H <input type="radio"/> M <input checked="" type="radio"/> L	H <input type="radio"/> M <input checked="" type="radio"/> L	H M <input type="radio"/> L <input checked="" type="radio"/>	
Value	<input checked="" type="radio"/> H M L	H M <input type="radio"/> L <input checked="" type="radio"/>	H <input type="radio"/> M <input checked="" type="radio"/> L	<b>TOTAL</b>
<b>Score Based on Ratings</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>16</b>

**Score for each function based on three ratings (order of ratings is not important)**

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
	<i>Circle the appropriate category</i>
<b>Vernal Pools</b>	<b>II</b> <b>III</b>
<b>Alkali</b>	<b>I</b>
<b>Wetland of High Conservation Value</b>	<b>I</b>
<b>Bog and Calcareous Fens</b>	<b>I</b>
<b>Old Growth or Mature Forest – slow growing</b>	<b>I</b>
<b>Aspen Forest</b>	<b>I</b>
<b>Old Growth or Mature Forest – fast growing</b>	<b>II</b>
<b>Floodplain forest</b>	<b>II</b>
None of the above	<b>X</b>

Wetland name or number     P    

**Maps and figures required to answer questions correctly for Eastern Washington  
Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet ( <i>can be added to map of hydroperiods</i> )	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

**Riverine Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream ( <i>can be added to another figure</i> )	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

**Lake Fringe Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

**Slope Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of <b>dense, rigid</b> trees, shrubs, and herbaceous plants ( <i>can be added to figure above</i> )	S 4.1	
Boundary of area within 150 ft of the wetland ( <i>can be added to another figure</i> )	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

## HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
- The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
  - At least 30% of the open water area is deeper than 10 ft (3 m)

**NO - go to 2**

**YES - The wetland class is Lake Fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?
- The wetland is on a slope (*slope can be very gradual*),
  - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
  - The water leaves the wetland **without being impounded**.

**NO - go to 3**

**YES - The wetland class is Slope**

**NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
- The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
  - The overbank flooding occurs at least once every 10 years.

**NO - go to 4**

**YES - The wetland class is Riverine**

**NOTE:** The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

**NO - go to 5**

**YES - The wetland class is Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number     P    

**NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*



Wetland name or number     P    

### DEPRESSIONAL WETLANDS

**Water Quality Functions** - Indicators that the site functions to improve water quality

Points  
(only 1  
score per  
box)

D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
Wetland has <u>no surface water outlet</u>	points = 5		
<u>Wetland has an intermittently flowing outlet</u>	<u>points = 3</u>		3
Wetland has a highly constricted permanently flowing outlet	points = 3		
Wetland has a permanently flowing, unconstricted, surface outlet	points = 1		
D 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic ( <i>use NRCS definitions of soils</i> )			
	YES = 3	<u>NO = 0</u>	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes)			
Wetland has <u>persistent, ungrazed, vegetation for &gt; 2/3 of area</u>	points = 5		
<u>Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area</u>	<u>points = 3</u>		3
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1		
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0		
D 1.4. Characteristics of seasonal ponding or inundation:			
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>			
Area seasonally ponded is > 1/2 total area of wetland	points = 3		
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1		0
<u>Area seasonally ponded is &lt; 1/4 total area of wetland</u>	<u>points = 0</u>		
Total for D 1		Add the points in the boxes above	6

**Rating of Site Potential** If score is:      12- 16 = H   X   6- 11 = M      0- 5 = L

*Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland receive stormwater discharges?	Yes = 1	<u>No = 0</u>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u>	No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1	<u>No = 0</u>	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source _____			
	Yes = 1	<u>No = 0</u>	0
Total for D 2		Add the points in the boxes above	1

**Rating of Landscape Potential** If score is:      3 or 4 = H   X   1 or 2 = M      0 = L

*Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?			
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1	<u>No = 0</u>	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	<u>Yes = 1</u>	No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality ( <i>answer YES if there is a TMDL for the drainage or basin in which the wetland is found</i> )?	<u>Yes = 2</u>	No = 0	2
Total for D 3		Add the points in the boxes above	3

**Rating of Value** If score is:   X   2-4 = H      1 = M      0 = L

*Record the rating on the first page*

Wetland name or number     P    

**DEPRESSIONAL WETLANDS**

Points  
(only 1 score  
per box)

**Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet

points = 8

Wetland has an intermittently flowing outlet

points = 4

4

Wetland has a highly constricted permanently flowing outlet

points = 4

Wetland has a permanently flowing unconfined surface outlet

points = 0

*(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).

Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8

Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6

The wetland is a headwater wetland points = 4

0

Seasonal ponding: 1 ft - < 2 ft points = 4

Seasonal ponding: 6 in - < 1 ft points = 2

Seasonal ponding: < 6 in or wetland has only saturated soils points = 0

Total for D 4

Add the points in the boxes above

4

**Rating of Site Potential** If score is:     12-16 = H         6-11 = M         X 0-5 = L    

*Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges?

Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?

Yes = 1 No = 0

1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

2

**Rating of Landscape Potential** If score is:     3 = H         X 1 or 2 = M         0 = L    

*Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The wetland is in a landscape that has flooding problems.

Choose the description that best matches conditions around the wetland being rated. Do not add points.

Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

0

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood.

Explain why The wetland stores very little water in the watershed. points = 0

There are no problems with flooding downstream of the wetland points = 0

D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

0

**Rating of Value** If score is:     2-4 = H         1 = M         X 0 = L    

*Record the rating on the first page*

<b>These questions apply to wetlands of all HGM classes.</b>		(only 1 score per box)
<b>HABITAT FUNCTIONS</b> - Indicators that site functions to provide important habitat		
<b>H 1.0.</b> Does the wetland have the potential to provide habitat for many species?		
<p><b>H 1.1.</b> Structure of the plant community:  <i>Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is <math>\geq \frac{1}{4}</math> ac or <math>\geq 10\%</math> of the wetland if wetland is <math>&lt; 2.5</math> ac.</i></p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants 0-12 in (0-30 cm) high are the highest layer and have <math>&gt; 30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants &gt;12-40 in (<math>&gt;30</math>-100 cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input type="checkbox"/> Emergent plants <math>&gt; 40</math> in (<math>&gt; 100</math> cm) high are the highest layer with <math>&gt;30\%</math> cover</p> <p><input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have <math>&gt;30\%</math> cover)</p> <p><input type="checkbox"/> Forested (areas where trees have <math>&gt;30\%</math> cover)</p>	<p>4 or more checks: points = 3</p> <p>3 checks: points = 2</p> <p><b>2 checks: points = 1</b></p> <p>1 check: points = 0</p>	<b>1</b>
<b>H 1.2.</b> Is one of the vegetation types Aquatic Bed?	Yes = 1 <b>No = 0</b>	<b>1</b>
<p><b>H 1.3.</b> <u>Surface water</u></p> <p><b>H 1.3.1.</b> Does the wetland have areas of open water (without emergent or shrub plants) over at least <math>\frac{1}{4}</math> ac <b>OR</b> 10% of its area during the March to early June <b>OR</b> in August to the end of September? <i>Answer YES for Lake Fringe wetlands.</i></p> <p><b>H 1.3.2.</b> Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least <math>\frac{1}{4}</math> ac or 10% of its area? <i>Answer yes only if H 1.3.1 is No.</i></p>	<p>Yes = 3 points &amp; go to H 1.4 <b>No = go to H 1.3.2</b></p> <p><b>Yes = 3</b> No = 0</p>	<b>3</b>
<p><b>H 1.4.</b> <u>Richness of plant species</u></p> <p>Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. <i>Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)</i></p> <p># of species <u>  7  </u></p>	<p>Scoring: <math>&gt; 9</math> species: points = 2</p> <p><b>4-9 species: points = 1</b></p> <p><math>&lt; 4</math> species: points = 0</p>	<b>1</b>
<p><b>H 1.5.</b> <u>Interspersion of habitats</u></p> <p>Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.</p> <p><i>Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.</i></p>		<p>Figure <u>1</u></p> <p><b>0</b></p> <p>Riparian braided channels with 2 classes</p>

Wetland name or number     P    

<p>H 1.6. <u>Special habitat features</u>  <i>Check the habitat features that are present in the wetland. The number of checks is the number of points.</i>  <input type="checkbox"/> Loose rocks larger than 4 in OR large, downed, woody debris (&gt; 4 in diameter) within the area of surface ponding or in stream.  <input type="checkbox"/> Cattails or bulrushes are present within the wetland.  <input type="checkbox"/> Standing snags (diameter at the bottom &gt; 4 in) in the wetland or within 30 m (100 ft) of the edge.  <input type="checkbox"/> Emergent or shrub vegetation in areas that are permanently inundated/ponded.  <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (&gt; 45 degree slope) OR signs of recent beaver activity  <input checked="" type="checkbox"/> Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>)</p>	1
<p>Total for H 1</p>	7

**Rating of Site Potential** If score is:     15-18 = H       X  7-14 = M         0-6 = L     Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  7.5  </u> = <u>  7.5  </u> %            &gt; 1/3 (33.3%) of 1 km Polygon points = 3            20-33% of 1km Polygon points = 2            10-19% of 1km Polygon points = 1  <u>&lt;10% of 1km Polygon</u> points = 0</p>	0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around wetland.  <i>Calculate:</i> % undisturbed habitat <u>  0  </u> + [(% moderate and low intensity land uses)/2] <u>  18.1  </u> = <u>  18.1  </u> %            Undisturbed habitat &gt; 50% of Polygon points = 3            Undisturbed habitat 10 - 50% and in 1-3 patches points = 2  <u>Undisturbed habitat 10 - 50% and &gt; 3 patches</u> points = 1            Undisturbed habitat &lt; 10% of Polygon points = 0</p>	1
<p>H 2.3. Land use intensity in 1 km Polygon:  <u>&gt; 50% of Polygon is high intensity land use</u> points = (-2)            Does not meet criterion above points = 0</p>	-2
<p>H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. <i>Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs</i>            Yes = 3 <u>No = 0</u></p>	0
<p>Total for H 2</p>	-1

**Rating of Landscape Potential** If score is:     4-9 = H         1-3 = M       X  < 1 = L     Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose the highest score that applies to the wetland being rated</i>            Site meets ANY of the following criteria: points = 2            — It has 3 or more priority habitats within 100 m (see Appendix B)            — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)            — It is mapped as a location for an individual WDFW species            — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources            — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan  <u>Site has 1 or 2 priority habitats within 100 m (see Appendix B)</u> points = 1            Site does not meet any of the criteria above points = 0</p>	1

**Rating of Value** If score is:     2 = H       X  1 = M         0 = L     Record the rating on the first page

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

**Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.**

<b>Wetland Type</b>	<b>Category</b>
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p> <p><b>SC 1.0. Vernal pools</b>                      Is the wetland <b>less than 4000 ft<sup>2</sup></b>, and does it meet at least <b>two</b> of the following criteria?                      — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input.                      — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.</i>                      — The soil in the wetland is shallow [<math>&lt; 1</math> ft (30 cm) deep] and is underlain by an impermeable layer such as basalt or clay.                      — Surface water is present for less than 120 days during the wet season.                      Yes – Go to <b>SC 1.1</b> No = <b>Not a vernal pool</b></p> <p>SC 1.1. Is the vernal pool relatively undisturbed in February and March?                      Yes – Go to <b>SC 1.2</b> No = <b>Not a vernal pool with special characteristics</b></p>	
<p>SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)?                      Yes = <b>Category II</b> No = <b>Category III</b></p>	<p><b>Cat. II</b> <b>Cat. III</b></p>
<p><b>SC 2.0. Alkali wetlands</b>                      Does the wetland meet <b>one</b> of the following criteria?                      — The wetland has a conductivity <math>&gt; 3.0</math> mS/cm.                      — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as “alkali” species (see Table 4 for list of plants found in alkali systems).                      — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.  <b>OR</b> does the wetland unit meet two of the following three sub-criteria?                      — Salt encrustations around more than 75% of the edge of the wetland                      — More than <math>\frac{3}{4}</math> of the plant cover consists of species listed on Table 4                      — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.                      Yes = <b>Category I</b> No = <b>Not an alkali wetland</b></p>	<p><b>Cat. I</b></p>
<p><b>SC 3.0. Wetlands of High Conservation Value (WHCV)</b>                      SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?                      Yes – Go to <b>SC 3.2</b> No – Go to <b>SC 3.3</b>                      SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b>                      SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?  <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a>                      Yes – <b>Contact WNHP/WDNR and go to SC 3.4</b> No = <b>Not a WHCV</b>                      SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website?                      Yes = <b>Category I</b> No = <b>Not a WHCV</b></p>	<p><b>Cat. I</b></p>

<p><b>SC 4.0 Bogs and Calcareous Fens</b>          Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <i>See Appendix C for a field key to identify organic soils.</i>          Yes – Go to <b>SC 4.3</b> No – Go to <b>SC 4.2</b></p> <p>SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?          Yes – Go to <b>SC 4.3</b> No = <b>Is not a bog for rating</b></p> <p>SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.4</b>  <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</p> <p>SC 4.4. Is an area with peats or mucks forested (&gt; 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy?          Yes = <b>Category I bog</b> No – Go to <b>SC 4.5</b></p> <p>SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?          Yes = <b>Is a Calcareous Fen for purpose of rating</b> No – Go to <b>SC 4.6</b></p> <p>SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:          — Marl deposits [calcium carbonate (CaCO<sub>3</sub>) precipitate] occur on the soil surface or plant stems          — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland          Yes = <b>Is a Category I calcareous fen</b> No = <b>Is not a calcareous fen</b></p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p>
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<p><b>SC 5.0. Forested Wetlands</b>          Does the wetland have an area of forest rooted within its boundary that meets <b>at least one</b> of the following three criteria? (<i>Continue only if you have identified that a forested class is present in question H 1.1</i>)</p> <ul style="list-style-type: none"> <li>— The wetland is within the 100 year floodplain of a river or stream</li> <li>— Aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species</li> <li>— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are “mature” or “old-growth” according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>)</li> </ul> <p>Yes – Go to <b>SC 5.1</b> No = <b>Not a forested wetland with special characteristics</b></p> <p>SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>)?          Yes = <b>Category I</b> No – Go to <b>SC 5.2</b></p> <p>SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species?          Yes = <b>Category I</b> No – Go to <b>SC 5.3</b></p> <p>SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (<i>see Table 7</i>)?          Yes = <b>Category II</b> No – Go to <b>SC 5.4</b></p> <p>SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream?          Yes = <b>Category II</b> No = <b>Not a forested wetland with special characteristics</b></p> <p><b>Category of wetland based on Special Characteristics</b>  <i>Choose the highest rating if wetland falls into several categories</i>          If you answered No for all types, enter “Not Applicable” on Summary Form</p>	<p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. I</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">Cat. II</p> <p style="text-align: center;">N/A</p>
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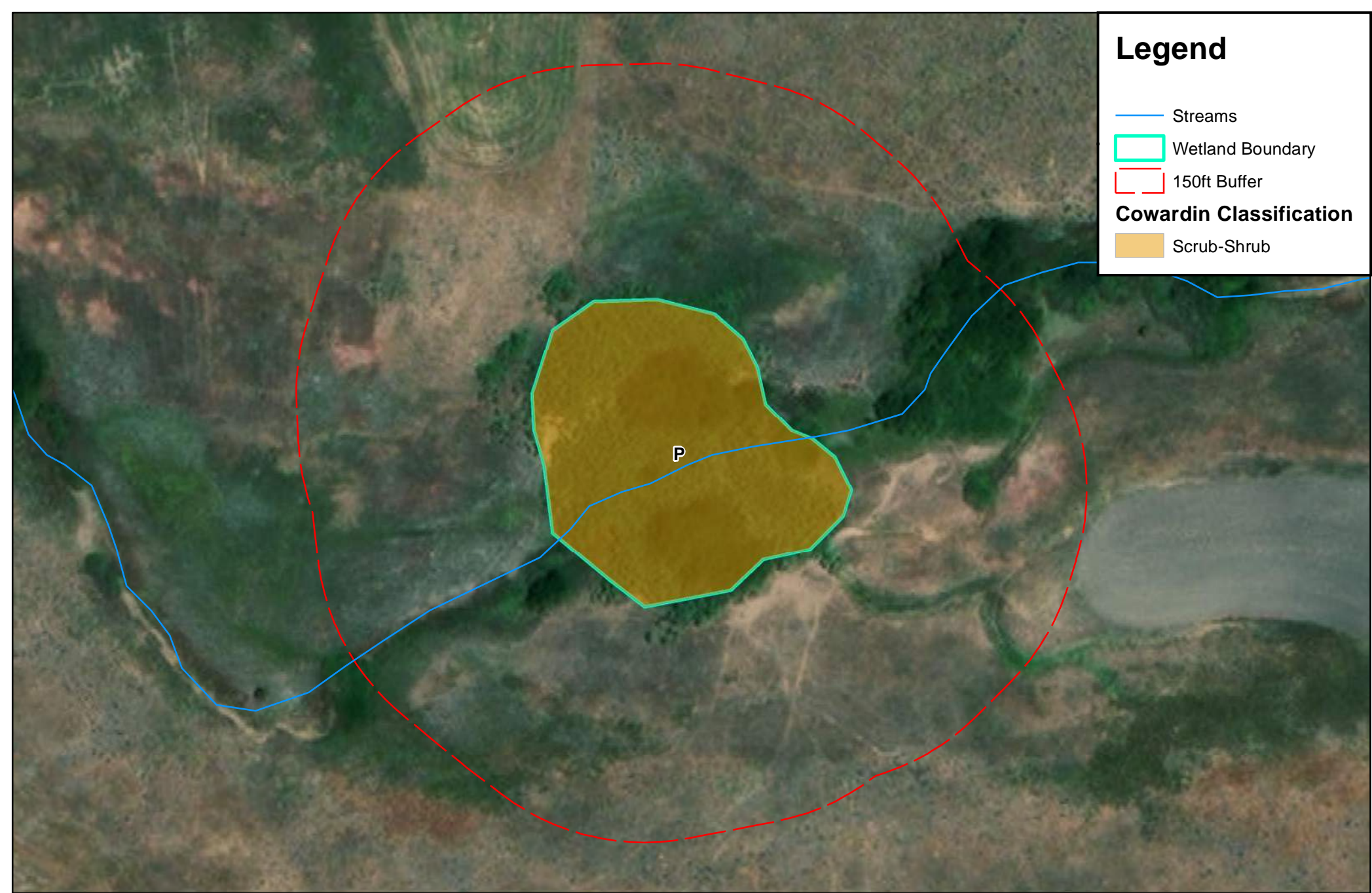
# Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** *This question is independent of the land use between the wetland and the priority habitat.*

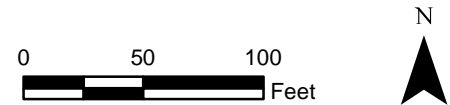
- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm) in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- **Juniper Savannah:** All juniper woodlands.

**Note:** All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.



**Figure 1. Wetland P Cowardin Classifications**

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# Legend

— Streams

▭ Wetland Boundary

## Hydroperiods

▭ Occasionally Flooded or Inundated

▭ Saturated Only



Figure 2. Wetland P Hydroperiods  
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# Legend

- Streams
- Wetlands
- Contributing Basin

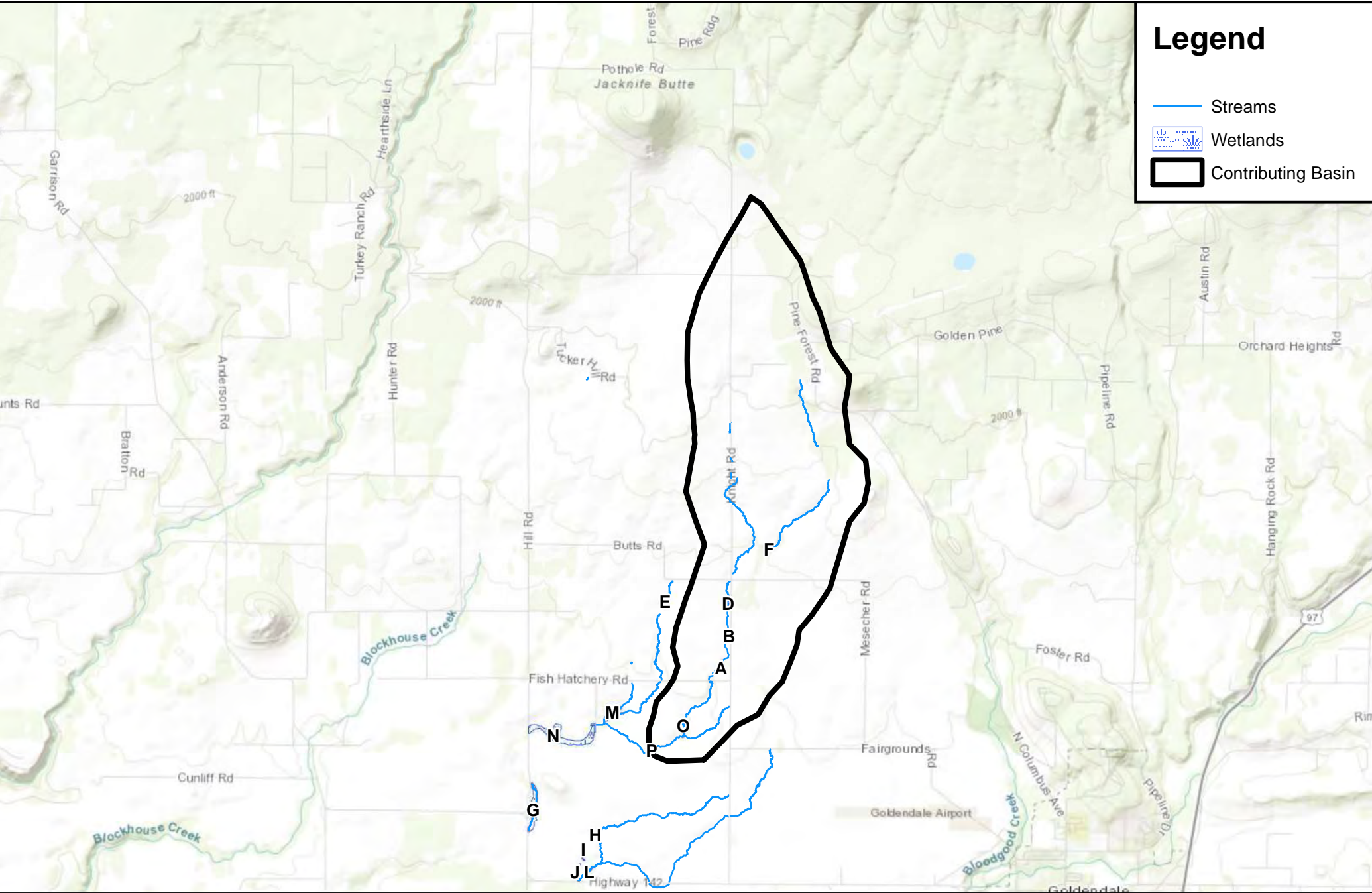
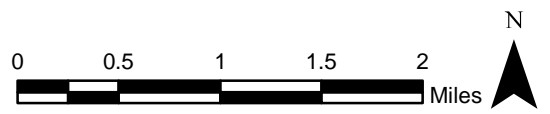







Figure 3. Wetland P Contributing Basin  
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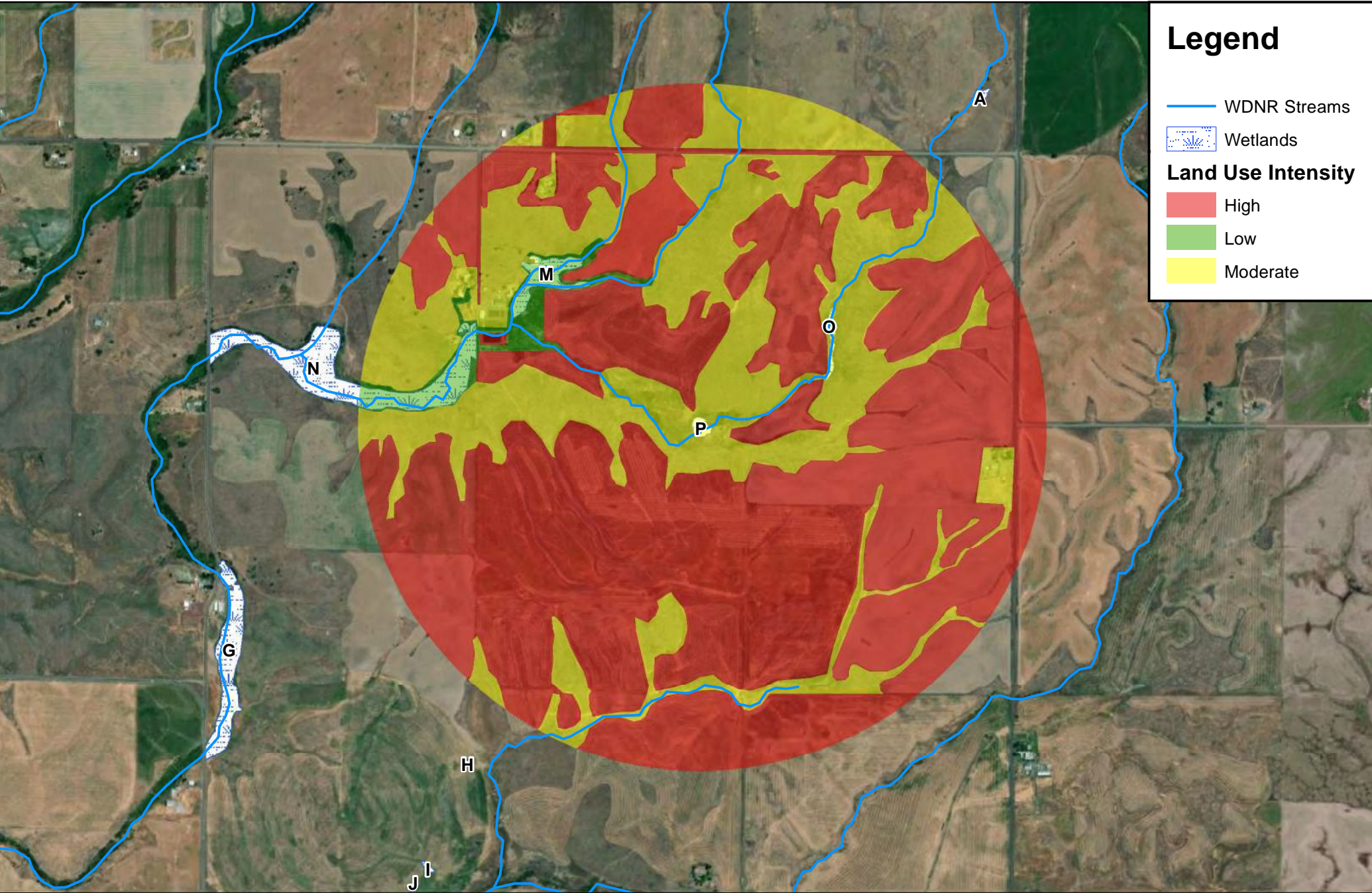


**Legend**

-  WDNR Streams
-  Wetlands

**Land Use Intensity**

-  High
-  Low
-  Moderate



**Figure 4. Wetland P Land Use and Habitat Map**  
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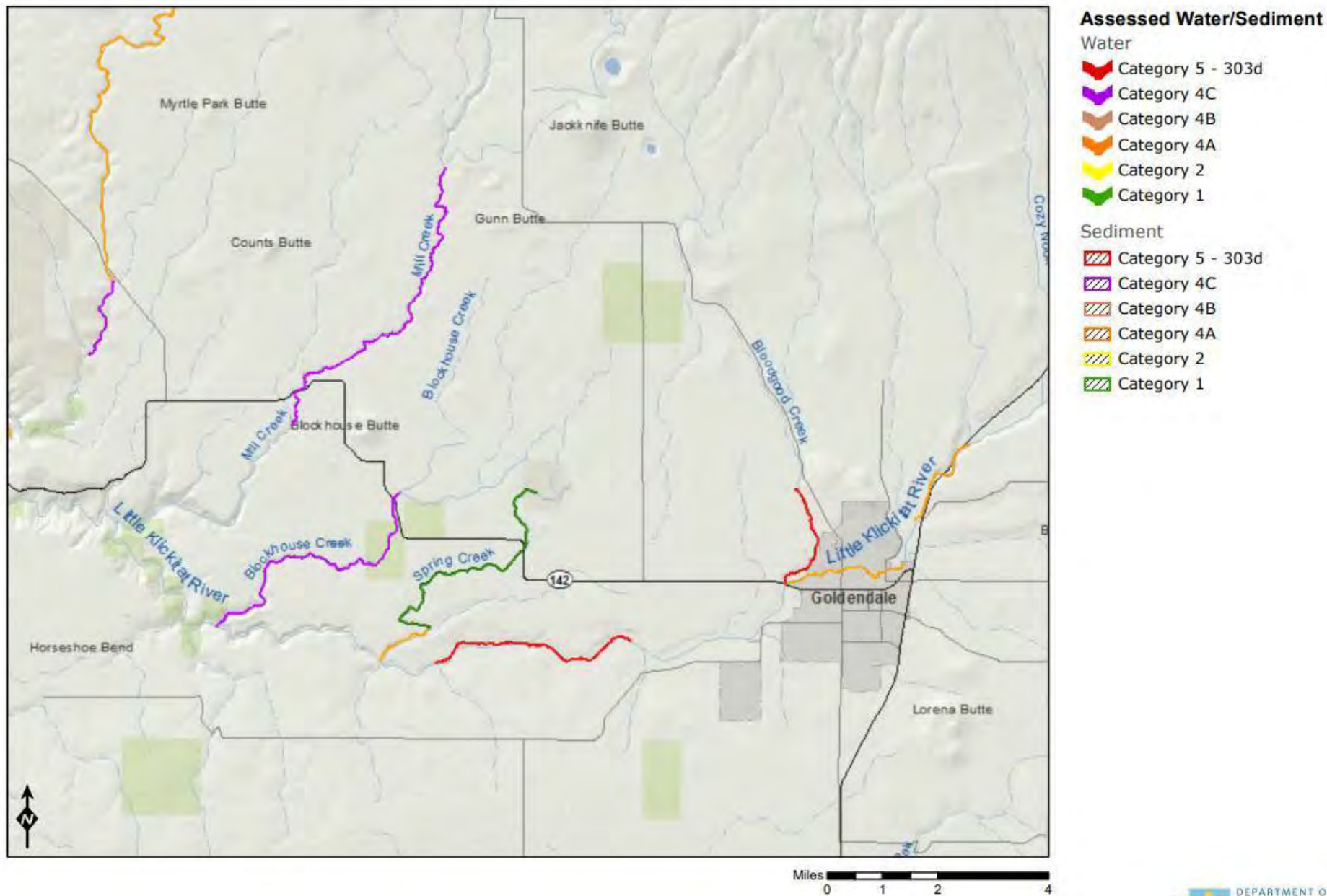


Figure 5. 303(d) Listed Waters in Little Klickitat River Basin (WRIA 30)

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# Klickitat County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Klickitat County

## Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
<a href="#">Little Klickitat River</a>	BOD (5-day) Chlorine	EPA approved	<a href="#">Mark Peterschmidt</a> 509-454-7843
<a href="#">Little Klickitat River Watershed</a>	Temperature	EPA approved and Has an implementation plan	<a href="#">Mark Peterschmidt</a> 509-454-7843

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our [accessibility services](#).

Figure 6. TMDL's in Klickitat County (WRIA 29, 30, 31, and 37)

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