Attachment E. Wetland Delineation Reports and Addendum

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Amendment to the 2020 and 2022 Carriger Solar, LLC Project Wetland and Waterbodies Delineation Reports

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October 28, 2022

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1.0 Introduction

This report serves as an amendment to the 2020 and 2022 wetland and waterbodies delineation reports for the Carriger Solar, LLC Project (Project), and **replaces** the previous amendment dated May 25, 2022. The Project is a proposed solar photovoltaic electric generating facility that includes 160 megawatts (MW) of solar energy and 63 MW of battery energy storage located within an approximately 2,000 acre lease area east of the City of Goldendale in Klickitat County, Washington. The following provides a summary of delineation surveys completed at the Project and the consultation history between Washington Department of Ecology (Ecology) and Cypress Creek Renewables, LLC (CCR) and its consultants.

- 2020 Delineation Report and Consultation with Ecology
    - In 2020, WSP (formerly Ecology and Environment) prepared a delineation report for an approximately 1,260-acre survey area of the Project site (i.e. the northern portion of the current Project area). The 2020 WSP delineation report (Ecology and Environment 2020) is referred to as the "2020 Delineation Report" in this amendment.
    - A request for a Letter of Determination was submitted to Ecology on July 28, 2020.
    - A site visit was conducted by Ecology on October 9, 2020.
    - Ecology requested additional information for one feature (Stream 3); WSP provided this additional information in an October 27, 2020 memo; Ecology concurred (November 5, 2020) that this feature is not a Water of the State.
    - The updated 2020 Wetland and Waterbodies Delineation Report was submitted to Ecology on December 1, 2020, and identified six wetlands and five streams within the northern portion of the Project area.
- 2021 Field Work and 2022 Delineation Report
    - In 2021, CCR expanded the Project site from 1,260 acres to approximately 2,260 acres. An additional wetland delineation was completed by WSP in July 2021 for the expanded area (i.e. the southern portion of the current Project area) and WSP prepared a wetland and waterbodies delineation report for the southern parcels. This 2022 WSP delineation report (WSP 2022) is referred to as the "2022 Delineation Report" in this amendment and supplements the 2020 Delineation Report, which covered the northern parcels.
    - The 2022 Delineation Report identifies an additional nine wetlands and six streams within the southern portion of the Project area.
- May 2022 Addendum with Data on Fish Use and Hydroperiods
    - Tetra Tech was hired by CCR to complete wildlife and botanical surveys and to support the permitting for the Project. After reviewing the WSP 2020 and 2022

Delineation Reports, Tetra Tech identified that additional information on fish use and hydroperiods for the delineated streams was needed. Based on previous project experience in Klickitat County and consultation with Ecology, Tetra Tech understands that this information is a required component of wetland delineation reports.

- On April 5, 2022, Tetra Tech completed field work and prepared an addendum to the 2020 and 2022 Delineation Reports with additional information on fish use and hydroperiods for the previously delineated streams.
- This information was provided to Lori White of Ecology via email from Jess Taylor on June 2, 2022 via a memorandum dated May 25, 2022 and titled "Amendment to the 2020 and 2022 Carriger Solar Wetland and Waterbodies Delineation Reports." The memorandum included a figure that shows the expanded survey area and all updated delineated features from the 2020 and 2021 WSP survey work. The memorandum also contained a photo log and Streamflow Duration Assessment Method (SDAM) forms with the updated information.
- In the June 2, 2022 email from Jess Taylor to Lori White, Tetra Tech noted that during the May 2022 botanical surveys, additional potential wetland and stream features were identified in the southern portion of the Project area that were not mapped by WSP in the 2020 and 2022 Delineation Reports. CCR directed Tetra Tech to conduct additional delineation work at the Project site necessary to supplement the WSP 2020 and 2021 Delineation Reports and ensure the final reports are comprehensive.

As indicated above, this report serves as an amendment to the 2020 and 2022 Delineation Reports for the Project, and **replaces** the previous amendment dated May 25, 2022. Tetra Tech prepared this amendment to include hydroperiod and fish use information for the survey areas evaluated in the 2020 and 2022 Delineation Reports and to incorporate the information from Tetra Tech's 2022 field work including the delineation data and maps for the four wetlands, five vernal pools, and five streams (including three newly delineated streams and two extended stream features) delineated in April and June 2022.

2.0 Methods

Two staff experienced in conducting wetland delineations in the Arid West region of the United States were involved in the field surveys and review of the data and reporting. The staff include:

- Jessica Taylor, Wetland and Riparian Scientist, has 13 years of experience conducting wetland and other waters of the U.S. assessments in the Pacific Northwest. Ms. Taylor is the field and report lead.
- Katie Pyne, Junior Wetland Scientist, has 3 years of experience conducting wetland delineations on various projects in Idaho, Oregon, and Washington. Ms. Pyne assisted in field efforts and reporting.

The areas surveyed in the 2020 and 2022 Delineation Reports were re-surveyed by Tetra Tech on April 5, June 27, and June 28 of 2022. The survey area is comprised of approximately 2,011 acres primarily composed of private lands, in two non-contiguous areas as shown in Figure 1, and also includes a one mile Klickitat County right-of-way along Knight Road. On April 5, a wetland scientist used the standard SDAM for the Pacific Northwest (Nadeau 2015) to determine hydroperiods for each delineated waterway. Fish use was determined by using field indicators such as the presence of macroinvertebrates, ordinary high-water marks, slope, and distance to a perennial waterway.

On June 27 and 28, 2022 two wetland scientists visited the areas marked as potential wetlands and streams during the May 2022 habitat survey, and delineated four wetlands, five vernal pools, and five streams (three newly delineated streams and two extended stream features from previous delineations). Wetland presence was determined per methods in the 1987 Army Corps of Engineers Manual and the Arid West Supplement. Three field indicators of wetlands (hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to make a positive wetland determination. Wetlands classifications were based on Classification of Wetlands and Deep Water Habitats of the United States and rated using the Washington State Rating System for Eastern Washington (Cowardin et al. 1979; Hruby 2014). The rating system categorizes wetlands based on specific attributes such as rarity; sensitivity to disturbance; and water quality, hydrologic, and habitat functions. Field evaluations for potential wetlands were conducted using the following guidelines:

- Sample plots were chosen based on variations in topography and vegetation to identify the presence or absence of wetlands and determine wetland boundaries.
- Soil test pits were dug to a standard depth of 16 inches, unless refusal from rocky fill or naturally occurring rock was present, for determination of both wetland hydrology and hydric soil indicators.
    - Soil horizons and textures were identified and soil matrix and mottle colors, if present, were determined using Munsell® Soil Color Charts (Munsell 2009).
    - If present, standing water depth, depth to saturated soil, and/or high water table was documented and measured.
- Wetland indicator status for plants was determined using the State of Washington 2020 Wetland Plant List (USACE 2020).
- Washington Department of Ecology administrative rules for wetland delineated report requirements and jurisdictional determinations were followed (WAC 173-22-035).
- Photos were taken at each wetland in locations that best represent conditions throughout the immediate area. Photos are organized in the order that they were taken, and labeled with the feature name. Photos can be found in Appendix A, and Figure 3 shows the locations of these photos.

Non-wetland waters were evaluated using the following criteria:

- Stream channels less than 6 feet in width were mapped along their centerline, and streams greater than 6 feet in width were mapped at their Ordinary High Water Lines for each bank.

- Streams were delineated based on the presence of a defined channel with bed scour, sediment deposition, or other evidence of regular flow.
- Flow duration for the stream channels was determined using criteria in the Streamflow Duration Assessment Methodology (Nadeau 2015).
- Stream channels were classified following the Washington Department of Natural Resources interim water typing system (WAC 222-16-031). Water type classifications are based primarily on fish use and flow regime, as well as other values including water supply use.

Photographs, sample plots, and stream lines were recorded using a Juniper Geode series GPS unit. The Juniper Geode is configured to differentially correct positions in real-time using the Satellite Based Augmentation System, which typically results in positional error of less than 1 meter (Juniper Systems 2022). The newly delineated features are shown in Figure 1, and all delineated features within the survey area are shown in Figure 2.

Section 3.0 below details the hydroperiods, fish use, and additional wetland and waters delineations.

3.0 Results

3.1 Hydroperiod

The hydroperiod for each waterway delineated in the 2020 and 2022 Delineation Reports was determined by using the standard SDAM. This field assessment form was filled out for each stream, and each of these can be found in Appendix B. The changes to the stream type for each previously delineated stream is summarized in Table 1 below. The SDAM finding for the four streams delineated in April and June 2022 are also included in Table 1.

Table 1. SDAM Findings for Delineated Streams

Stream ID[1]	Location	Previous Type	SDAM Assessment
Stream 1	Western edge of survey area	Perennial	Perennial
Stream 1	Through the middle of the survey area	Intermittent	Intermittent
Stream 1	Eastern edge of survey area, and the little segments along Knight Rd	Intermittent	Ephemeral
Stream 2	Middle of survey area, flows towards the fish hatchery	Intermittent	Ephemeral
Stream 3	Middle of the survey area, north of Fish Hatchery Rd	N/A [2]	Ephemeral [3]
Stream 4	Southern portion	Intermittent	Intermittent
Stream 4	Southeast corner of survey area	Intermittent	Intermittent
Stream 4	Eastern edge of survey area	Intermittent	Ephemeral
Stream 5	Northern section of survey area	Ephemeral	Ephemeral
Stream 6	Southern portion of survey area, flows into Stream 4	Intermittent	Ephemeral
Stream 7	Flows into Stream 1, middle of the survey area	Intermittent	Ephemeral
Stream 8	Southern portion of survey area, flows into Stream 6	N/A	Ephemeral
ST-100	Eastern edge of survey area, flows into Stream 4	N/A	Ephemeral
ST-109	Middle of the survey area, flows into Stream 1	N/A	Ephemeral

1. There are multiple sections of some streams, as they go in and out of the survey area.
2. WSP previously delineated 111 foot section of this stream and determined it to not meet the definition of a surface water of the state nor a water of the state.
3. Tetra Tech delineated an approximately 2,000 foot extension of Stream 3 during the June 2022 field work.

3.2 Fish Use

As described in the 2020 and 2022 Delineation Reports, the Washington State Department of Natural Resources Forest Practices Application Mapping Tool shows the water type classifications of streams. The four different water types are S (shoreline), F (fish), Np (non-fish), and Ns (non-fish seasonal). In addition to utilizing this tool, fish use was determined by using field indicators such as the presence of macroinvertebrates, ordinary high-water marks, slope, and distance to a perennial waterway. These field indicator data were collected and reported by Tetra Tech in April 2022 using the SDAM (Appendix B).

Stream 1, on the western edge of the survey area, is mapped as type F, meaning that the stream meets the physical criteria to be used by fish. Stream 1 also has perennial flow as it is fed upstream by a spring, as noted by the landowner during conversation with the Tetra Tech surveyor in April 2022. Stream 4, below the confluence with Stream 6, in the southern portion of the survey area, is also mapped as type F, and has potential to act as fish habitat.

All other streams in the survey area are type Ns, meaning that they do not have surface flow during at least some portion of the year, and they do not meet the physical criteria of a fish-bearing stream.

These water type classifications determine the protective buffer width established in the Critical Areas Ordinance for Klickitat County. More information on established buffers is provided in Section 4 below.

3.3 Wetlands and Waters Delineations

During the Project's habitat surveys conducted in May of 2022, additional wetlands and streams were observed that had not previously been delineated and were not included in the 2020 and 2022 Delineation Reports. This led to a subsequent wetlands and waters survey by Tetra Tech staff on June 27 and 28, 2022 in which four wetlands, five vernal pools, and five streams were delineated. In addition to the three new stream features, two of the previously delineated streams (Stream 3 and Stream 5) was extended into a longer feature. Table 2 below summarizes the features that were delineated in April and June 2022 (shown in Figure 1). Data sheets for sample sites taken at each wetland can be found in Appendix C.

The buffers included in Tables 2 and 3, are determined by the SDAM Assessment (Appendix B) and Wetland Rating Forms (Appendix C) which were completed for each feature. The Critical Areas Ordinance for Klickitat County specifies the buffer distance established for each type of feature. Further information on established buffers from the Klickitat County Critical Areas Ordinance is included in Section 4.0 below.

Table 2. April and June 2022 Delineated Features

Name	Location	SDAM Assessment/Wetland Rating[1]	Acres	Buffer (feet)
ST-100	Eastern edge of survey area, flows into Stream 4	Ephemeral	2.72	25
ST-109	Middle of the survey area, flows into Stream 1	Ephemeral	2.18	25
Stream 3	Middle of the survey area, north of Fish Hatchery Rd	Ephemeral	2.52	25
Stream 5	Northern section of survey area	Ephemeral	3.06	25
Stream 8	Southern portion of survey area, flows into Stream 6	Ephemeral	3.03	25
VP-101	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.12	200
VP-102	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.09	200
WT-103	Middle of the survey area, near Fish Hatchery Rd	Depressional / IV	1.02	75
WT-104	In between Wetlands O and P	Riverine / IV	8.51	75
WT-105	Downstream of Wetland P	Riverine / IV	3.10	75
WT-106	Middle of survey area, near Stream 1	Depressional / IV	1.67	75
VP-107	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.27	200
VP-108	Middle of the survey area, near ST-109	Vernal pool / II	3.81	200
VP-110	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.49	200

1. The wetland ratings are determined by the Washington State Rating System for Eastern Washington (Cowardin et al. 1979; Hruby 2014). Category I is the highest rating, while Category IV is the lowest rating. These ratings are then used to determine the appropriate buffer for each wetland.

Wetlands

There are a total of eighteen wetlands and five vernal pools within the survey area, listed in Table 3 below and shown in Figure 2. The features had varying levels of disturbance, likely because of previous agricultural uses throughout the survey area. The majority of the wetlands were found in drainages and characterized as riverine wetlands. The vernal pools in the middle of the survey area

were observed due to surface soil cracking and the inherent lack of large vegetation present in vernal pools.

The predominant herbaceous vegetation observed in Palustrine Emergent (PEM) wetlands included baltic rush (*Juncus balticus*, FACW), dagger-leaf rush (*Juncus ensifolius*, FACW), Scouler's popcorn flower (*Plagiobothrys scouleri*, FACW), needle leaf navarretia (*Navarretia intertexta*, OBL), annual hairgrass (*Deschampsia danthonioides*, FACW), common spike-rush (*Eleocharis palustris*, OBL), and field horsetail (*Equisetum hyemale*, FAC). In PEM vernal pools, the dominant herbaceous vegetation included Scouler's popcorn flower (*Plagiobothrys scouleri*, FACW), needleleaf navarretia (*Navarretia intertexta*, OBL), and tiny mousetail (*Myosurus minimus*, OBL). The state-threatened foxtail mousetail (*Myosurus alopecuroides*) was observed in three of the vernal pools (VP-101, VP-102, and VP-107) during the Project's botanical surveys (Tetra Tech 2022).

Streams

There are a total of fourteen stream segments within the survey area, listed in Table 3 below and shown in Figure 2. The majority of the streams start out as ephemeral, and some of these streams become intermittent further downstream. There is one section of Stream 1, which was previously delineated by WSP, which has perennial flow. The intermittent drainages had some standing water and flow during the spring, but channels were dry by the end of June. No water was observed in any of the ephemeral stream segments.

Table 3. All Delineated Features

Name[1]	Location	SDAM Assessment/Wetland Rating[2]	Acres	Buffer (feet)
Stream 1	Western edge of survey area	Perennial (potential for fish)	15.95	150
Stream 1	Through the middle of the survey area	Intermittent	19.07	25
Stream 1	Eastern edge of survey area, and the little segments along Knight Rd	Ephemeral	1.43	25
Stream 2	Middle of survey area, flows towards the fish hatchery	Intermittent	9.57	25
Stream 3	Middle of the survey area, north of Fish Hatchery Rd	Ephemeral	2.52	25
Stream 4	Southern portion	Intermittent (potential for fish)	2.88	25
Stream 4	Southeast corner of survey area	Intermittent	5.13	25
Stream 4	Eastern edge of survey area	Ephemeral	8.93	25
Stream 5	Northern section of survey area	Ephemeral	3.06	25
Stream 6	Southern portion of survey area, flows into Stream 4	Intermittent	11.07	25

Name[1]	Location	SDAM Assessment/Wetland Rating[2]	Acres	Buffer (feet)
Stream 7	Flows into Stream 1, middle of the survey area	Ephemeral	3.17	25
Stream 8	Southern portion of survey area, flows into Stream 6	Ephemeral	3.03	25
ST-100	Eastern edge of survey area, flows into Stream 4	Ephemeral	2.72	25
ST-109	Middle of the survey area, flows into Stream 1	Ephemeral	2.18	25
		Acreage of all streams	**90.71**	
Wetland A	Middle of the survey area, along Stream 1	Riverine / IV	1.53	75
Wetland B	Middle of the survey area, along Stream 1	Depressional / IV	0.76	75
Wetland C	Middle of the survey area, along Stream 1	Depressional / IV	1.18	75
Wetland D	Middle of the survey area, along Stream 1	Slope / IV	2.83	75
Wetland E	Middle of the survey area, along Stream 2	Riverine / IV	2.11	75
Wetland F	Eastern edge of the survey area, along Stream 4	Riverine / IV	0.67	75
Wetland G	Southwestern edge of the survey area, along Stream 1	Riverine / III	15.07	75
Wetland H	Southern portion of survey area, near Stream 6	Depressional / IV	0.78	75
Wetland I	Southern portion of survey area, near Stream 6	Depressional / IV	1.13	75
Wetland J	Southern portion of survey area, near Stream 6	Depressional / IV	0.80	75
Wetland K	Southern portion of survey area, along Stream 6	Riverine / III	0.70	75
Wetland L	Southern portion of survey area, along Stream 6	Riverine / III	2.59	75
Wetland O	Middle of the survey area, along Stream 1	Riverine / III	3.94	75
Wetland P	Middle of the survey area, along Stream 1	Depressional / III	2.11	75

Name[1]	Location	SDAM Assessment/Wetland Rating[2]	Acres	Buffer (feet)
VP-101	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.12	200
VP-102	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.09	200
WT-103	Middle of the survey area, near Fish Hatchery Rd	Depressional / IV	1.02	75
WT-104	In between Wetland O and P	Riverine / IV	8.51	75
WT-105	Downstream of Wetland P	Riverine / IV	3.10	75
WT-106	Middle of survey area, near Stream 1	Depressional / IV	1.67	75
VP-107	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.27	200
VP-108	Middle of the survey area, near ST-109	Vernal pool / II	3.81	200
VP-110	Middle of the survey area, near Fish Hatchery Rd	Vernal pool / II	3.49	200
		Acreage of all wetlands	**67.28**	
		Total acreage of streams and wetlands	**157.99**	

1. There are multiple sections of some streams, as they go in and out of the survey area.
2. The wetland ratings are determined by the Washington State Rating System for Eastern Washington (Cowardin et al. 1979; Hruby 2014). Category I is the highest rating, while Category IV is the lowest rating. These ratings are then used to determine the appropriate buffer for each wetland.

4.0 Regulatory Review

4.1 Wetlands

Impacts to wetlands delineated in the survey area would require the review and approval of Klickitat County, WDFW, Ecology, and the US Army Corps of Engineers. The wetland section of the Klickitat County Critical Areas Ordinance (Klickitat County Ordinance [CAO] No. 0080613, Chapter III) designates and classifies wetland areas, and provides measures to protect their functions and values. The CAO requires the use of Ecology's Washington State Wetland Rating System for Eastern Washington (Hruby 2014) to determine a wetland's category, which is based on its score for habitat, water quality, and hydrologic functions. The CAO establishes protective buffers associated with wetlands and specifies that certain permits or approvals must be obtained for projects impacting wetlands and/or their buffers. These ratings and buffers are included in Tables 2 and 3 above. The CAO also establishes mitigation requirements for the alteration of wetlands. The CAO also allows for the averaging of required wetland buffer widths if the applicant demonstrates that

wetland function and values will not be reduced. More information about the requirements for averaging wetland buffer widths is in Part 3.3 of the Klickitat County CAO.

4.2 Waterbodies

The Critical Fish and Wildlife Habitat Conservation Areas section of the Klickitat County Critical Areas Ordinance advises on the buffers required for each type of stream (Klickitat County Ordinance No. 0080613, Chapter IV). The buffers range from 200 feet for state shorelines, 150 feet for Type F (fish) waters, 50 feet for Type Np (non-fish) waters, and 25 feet for Type Ns (non-fish seasonal) waters. The buffers for each stream segment are included in Tables 2 and 3. Similar to the wetland buffers, the CAO also allows for the averaging of required fish habitat conservation area/stream buffer widths if the applicant demonstrates that buffer function and values will not be reduced. More information about the requirements for averaging buffer widths for fish habitat conservation areas is in Part 4.3 of the Klickitat County CAO.

5.0 Conclusions

Using methods recommended in the Manual and Arid West Supplement, four additional wetlands and five vernal pools were delineated and documented in the survey area. Three additional streams were delineated and 2 stream lines were extended in the survey area. There are a total of eighteen wetlands and five vernal pools within the survey area and the total area of preliminary jurisdictional wetlands reported within the survey area is 67.28 acres. There are a total of fourteen stream segments within the survey area and the total area of preliminary jurisdictional waters within the survey area is 90.71 acres. Table 3 above summarizes the acreages of each wetland and stream delineated within the survey area (shown in Figure 2).

All wetlands identified in this report will likely be subject to regulations by the Washington State Department of Ecology. Any impact to jurisdictional wetlands or streams (or their buffers) would require a Section 404 permit through the US Army Corps of Engineers, a Section 401 permit through Ecology, a Hydraulic Project Approval through WDFW, and Critical Areas review from Klickitat County.

6.0 References

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Figures

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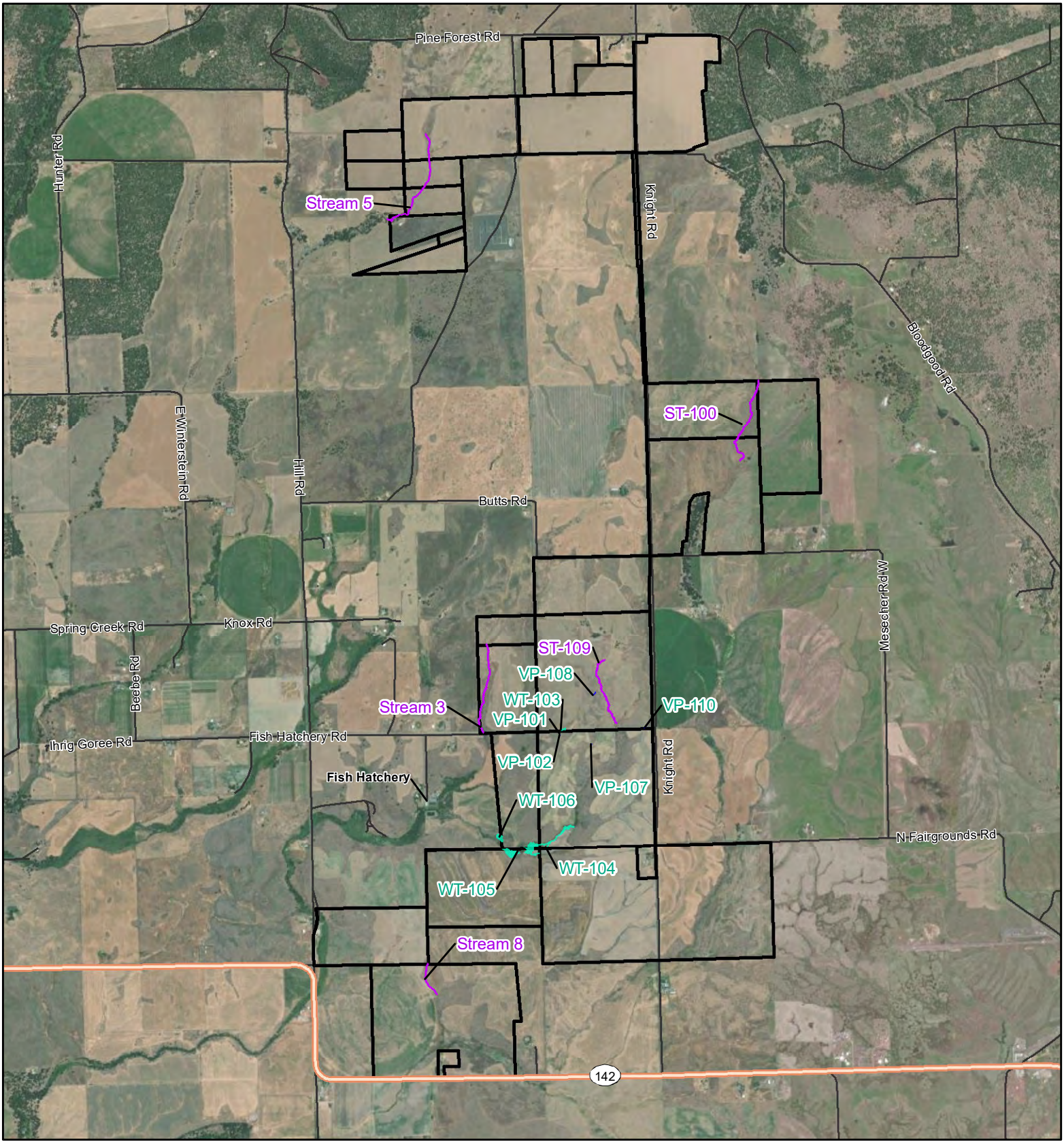

Survey Area

2022 Delineated Features

Ephemeral Stream

Vernal Pool

Wetland

N

0 2,000

Feet

9/13/2022

TETRA TECH

Figure 1
Newly Delineated Features

Carriger Solar, LLC Project

Klickitat County, WA

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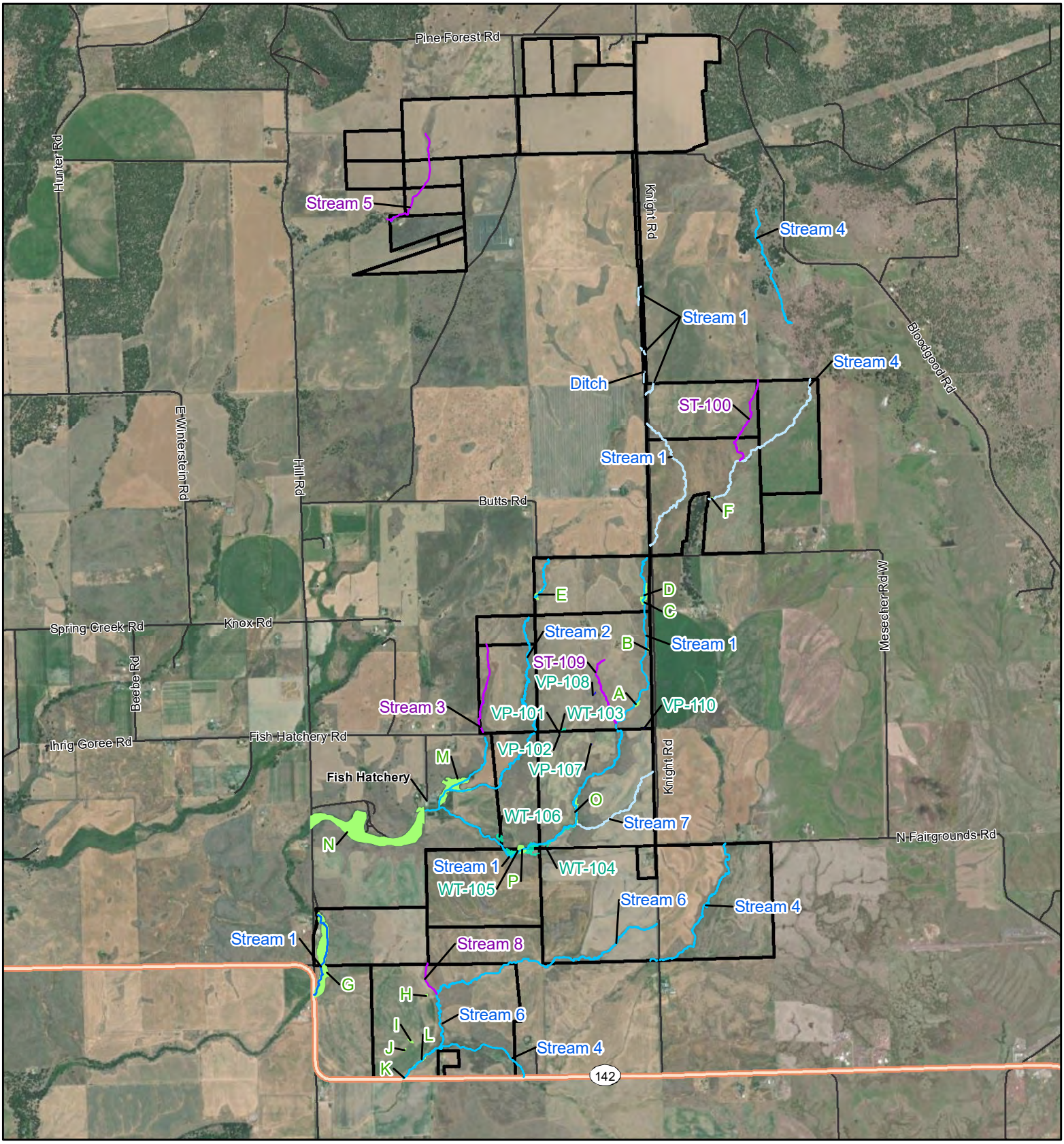

Survey Area

Previously Delineated Features

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Wetlands

2022 Delineated Features

- Ephemeral Stream
- Vernal Pool
- Wetland

N

0 2,000 Feet

TETRA TECH

Figure 2
Delineated Features

Carriger Solar, LLC Project
Klickitat County, WA

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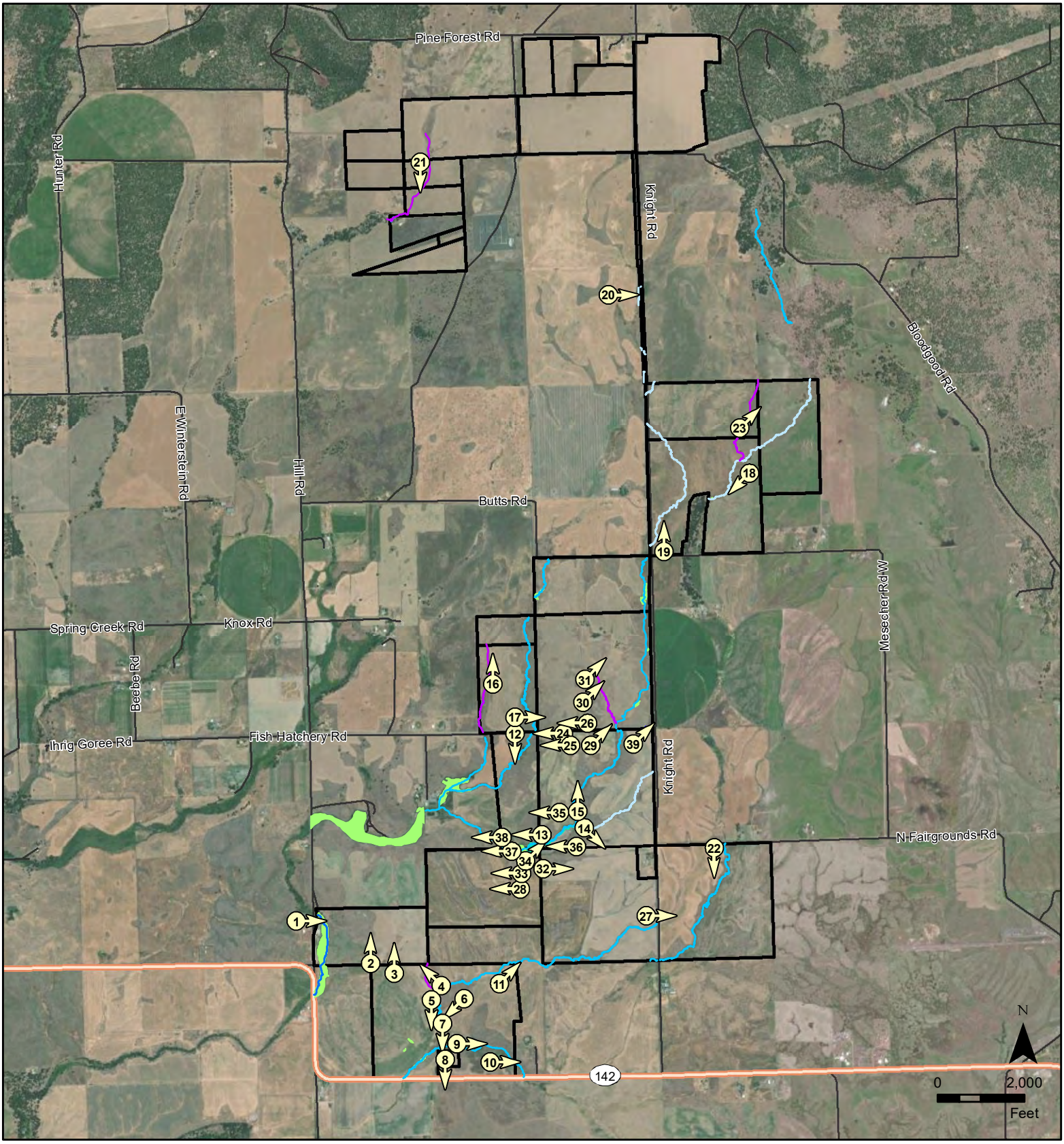

Photo Location and Direction

Survey Area

Previously Delineated Features

Perennial Stream

Intermittent Stream

Ephemeral Stream

Wetlands

2022 Delineated Features

Ephemeral Stream

Vernal Pool

Wetland

TETRA TECH

Figure 3
Photo Locations

Carriger Solar, LLC Project
Klickitat County, WA

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Appendix A. Photo Log

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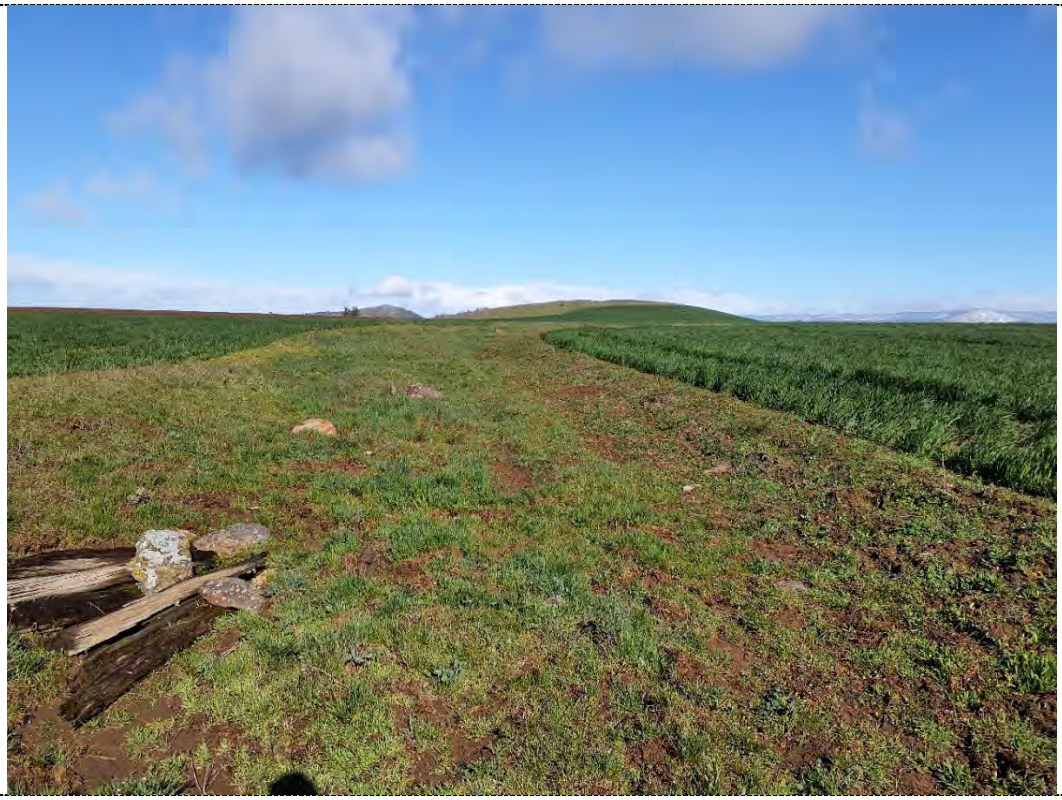
Photopoint 1. Stream 1, on the western edge of the Project Area. Perennial drainage. Facing east. 4/5/22.

Photopoint 2. Rock outcropping, potential wetland spot. Facing north. 4/5/22.

Photopoint 3. Rock outcropping, with standing water. Facing north. 4/5/22.



Photopoint 4. Stream 8, ephemeral drainage. Facing northwest. 4/5/22.

Photopoint 5. Stream 6, ephemeral drainage. Facing south. 4/5/22.

Photopoint 6. Stream 6, standing water. Facing southwest. 4/5/22.

Photopoint 7. Wetland spot next to Stream 6. Facing south. 4/5/22.

Photopoint 8. Wetland spot with willows and rose. Facing south. 4/5/22.

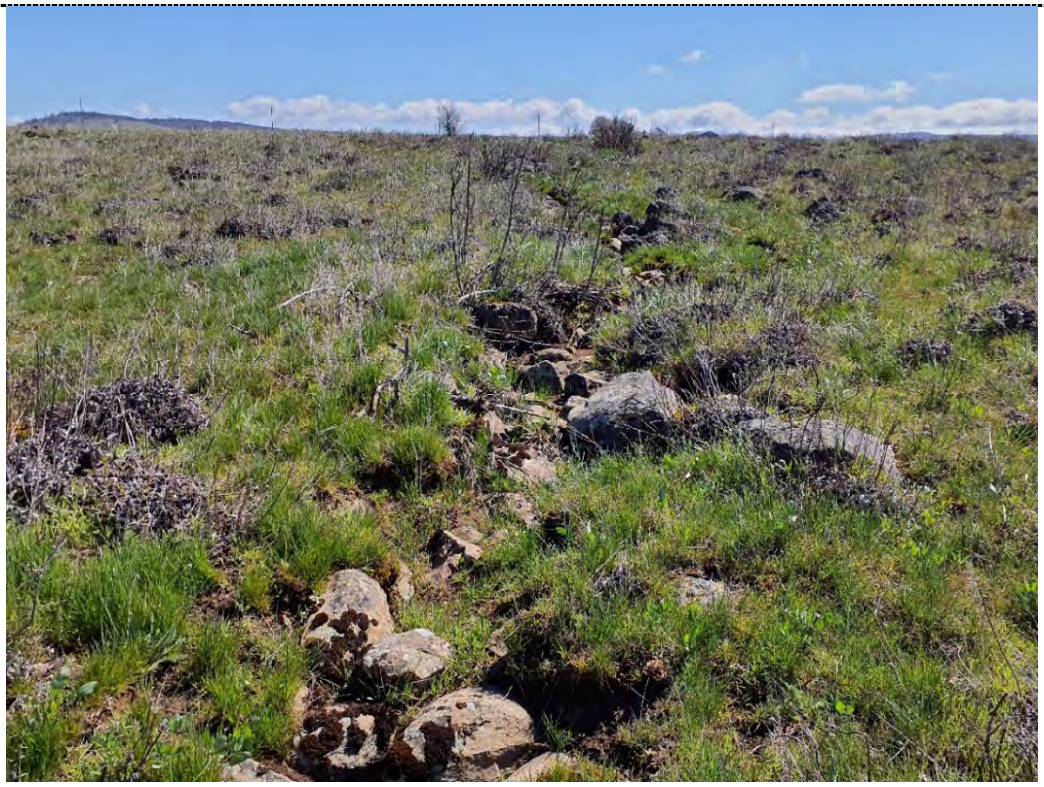
Photopoint 9. Stream 4, intermittent drainage. Facing south. 4/5/22.

Photopoint 10. Potential wetland area. Facing east. 4/5/22.

Photopoint 11. Stream 6, ephemeral drainage. Facing northeast. 4/5/22.

Photopoint 12. Stream 2, ephemeral drainage. Facing south. 4/5/22.

Photopoint 13. Stream 1, intermittent drainage. Facing west. 4/5/22.



Photopoint 14. Stream 7, ephemeral drainage. Facing southeast. 4/5/22.

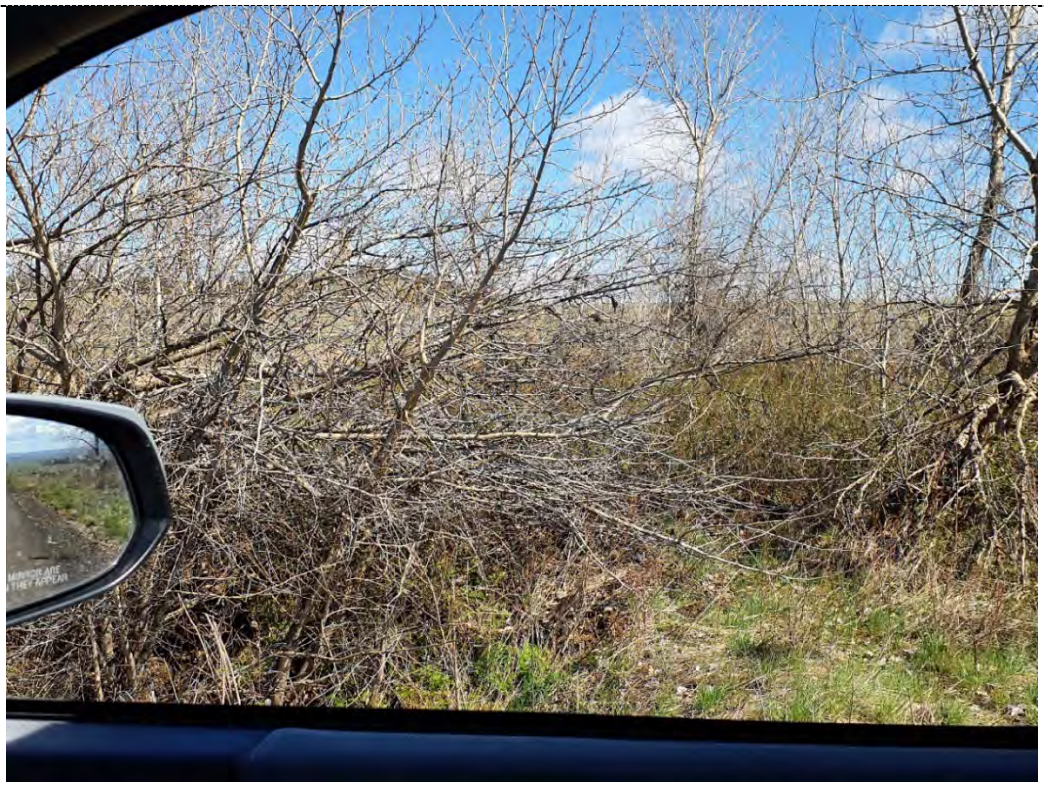
Photopoint 15. Wetland area along Stream 1. Facing north. 4/5/22.

Photopoint 16. Stream 3, ephemeral drainage. Facing north. 4/5/22.

Photopoint 17. Potential wetland spot, culvert under road. Facing east. 4/5/22.

Photopoint 18. Stream 4, ephemeral drainage. Facing southwest. 4/5/22.

Photopoint 19. Stream 1, ephemeral drainage. Facing north. 4/5/22.



Photopoint 20. Wetland spot along Knight Road. Facing east. 4/5/22.

Photopoint 21. Stream 5, ephemeral drainage. Facing south. 4/5/22.

Photopoint 22. Stream 4, intermittent drainage. Facing south. 4/5/22.

Photopoint 23. XBB105. Area not a wetland. Facing east. 6/27/22.

Photopoint 24. Stream 6. Facing east. 6/27/22.

Photopoint 25. ST-100. Ephemeral drainage, 1 foot wide, 100 percent cereal rye. Facing northeast. 6/27/22.

Photopoint 26. ST-109. Conditions in upper reach, 1% slope. Facing northeast. 6/27/22.

Photopoint 27. VP-101. Vernal pool. Facing west. 6/27/22.

Photopoint 28. VP-102. Vernal pool. Facing west. 6/27/22.

Photopoint 29. VP-107. Vernal pool between two agricultural fields. Facing northeast. 6/27/22.

Photopoint 30. VP-108. Vernal pool in rangeland. Facing northeast. 6/27/22.

Photopoint 31. VP-110. Vernal pool. Facing northeast. 6/27/22.

Photopoint 32. WT-103. Wetland area near road. Facing west. 6/27/22.

Photopoint 33. WT-103. Soil pit. 6/28/22.

Photopoint 34. WT-104a. Looking upstream. Facing west. 6/28/22.

Photopoint 35. WT-104b. Looking downstream. Facing west. 6/28/22.

Photopoint 36. WT-105. Wet meadow riverine wetland complex. Facing west. 6/28/22.

Photopoint 37. WT-105a. Looking downstream. Facing west. 6/28/22.

Photopoint 38. WT-105b. Looking upstream. Facing northeast. 6/28/22.

Photopoint 39. WT-105c. Facing west. 6/28/22.

Photopoint 40. WT-106. Pond. Facing west. 6/28/22.

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
Reach Boundaries Study area width.	Long. 120.904 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.4
	☑ Disturbed Site / Difficult Situation (Describe in "Notes")

Observed Hydrology

% of reach w/observed surface flow 100

% of reach w/any flow (surface or hyporheic) 100

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): Salix spp (FACW), Phalaris arundinacea (FACW)

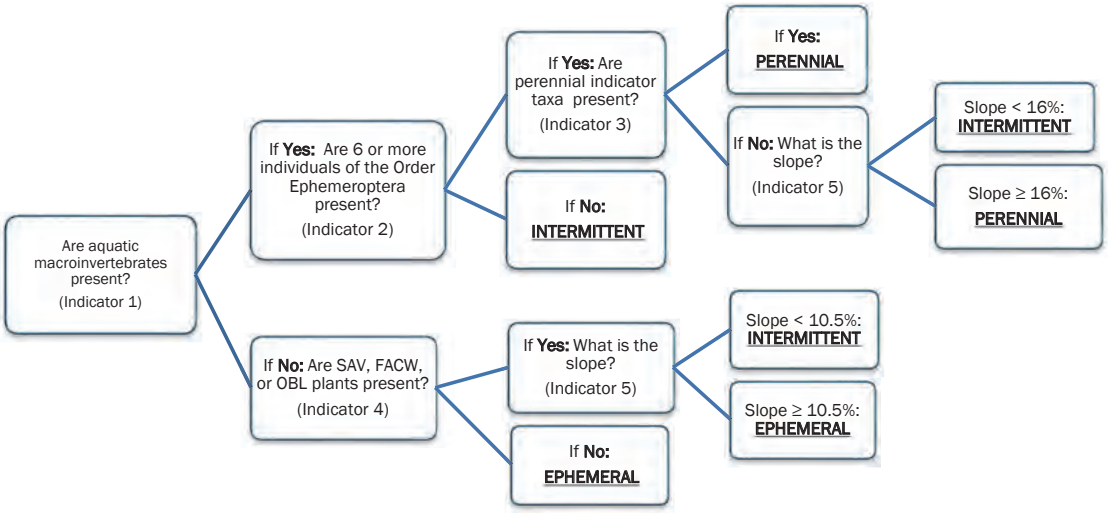
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
Odonota			3
Ephemeroptera			6

Indicators

1. Are aquatic macroinvertebrates present?	☑ Yes	☐ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☑ Yes	☐ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☑ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☑ Yes	☐ No
5. What is the slope? (In percent, measured for the valley, not the stream)	2 %	

Conclusions



Single Indicators:
- ☐ Fish
- ☐ Amphibians

Finding:
- ☐ Ephemeral
- ☐ Intermittent
- ☑ 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

Area is heavily grazed and utilized by livestock.

☐ Other: _____

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

The general area is much drier, and there is a clear change between the upland and the 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 1	Coordinates at downstream end (ddd.mm.ss) Lat. 45.8391 N
Reach Boundaries Study area width.	Long. 120.8883 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.25
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 100

% of reach w/any flow (surface or hyporheic) 100

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): Salix spp (FACW), Juncus effusus (FACW)

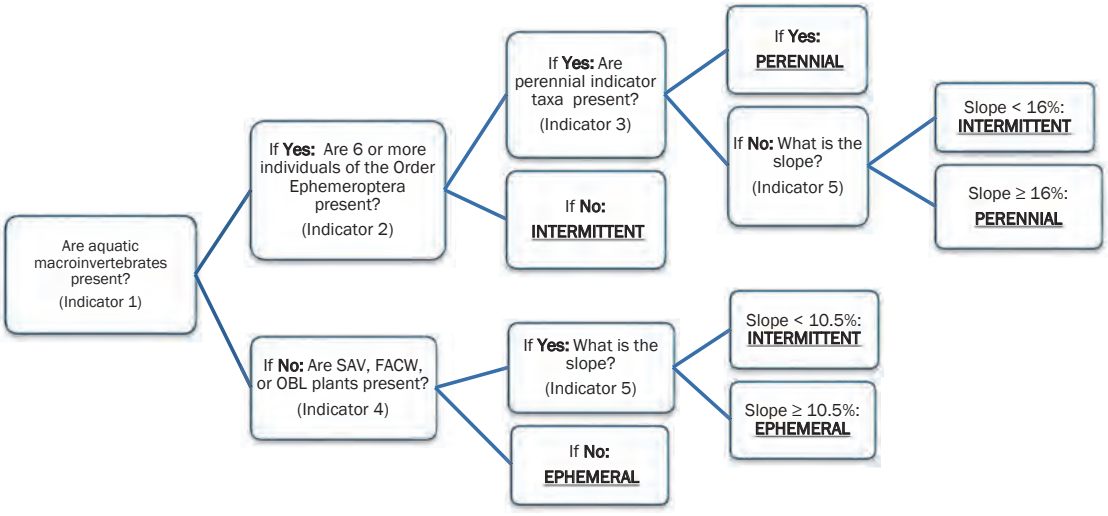
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☒ Yes	☐ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☐ Ephemeral
☒ Intermittent
☐ 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
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None (and indicator status):

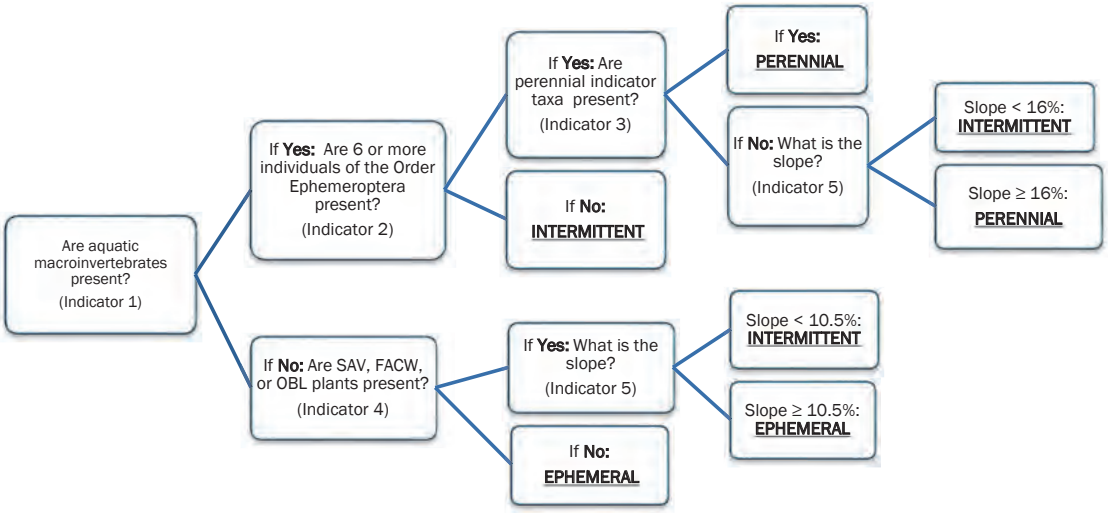
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	

Conclusions



Single Indicators:

☐ Fish

☐ Amphibians

Finding:

☒ Ephemeral

☐ Intermittent

☐ 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 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

There is no distinct change in vegetation between the upland and the riparian, only change in 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 2	Coordinates at downstream end (ddd.mm.ss) Lat. 45.8427 N
Reach Boundaries Study area width.	Long. 120.8887 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): Navarettia, popcorn flower, willow

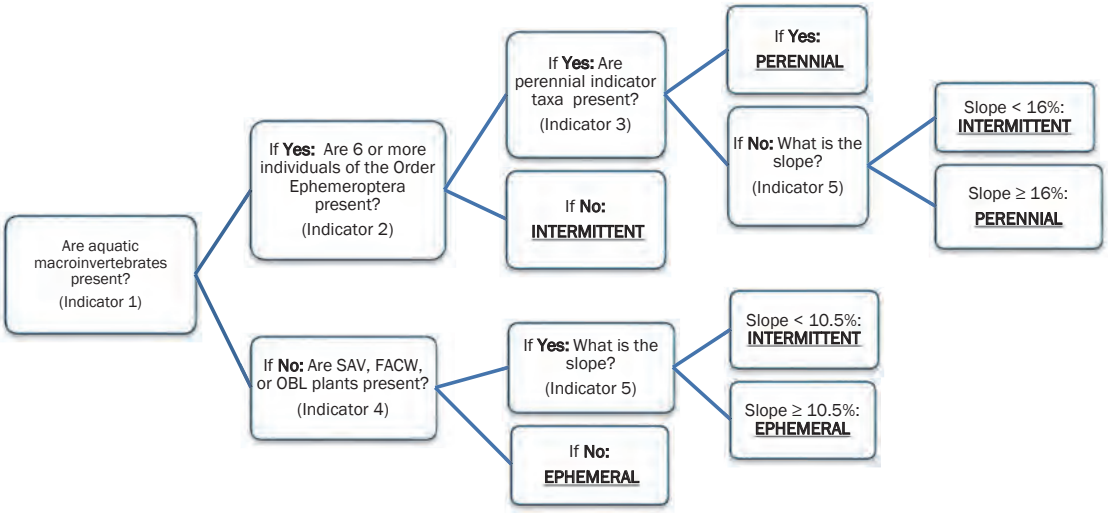
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:

☐ Fish

☐ Amphibians

Finding:

☐ Ephemeral

☒ Intermittent

☐ 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 (ddd.mm.ss) Lat. 45.8463 N
Reach Boundaries Study area width.	Long. 120.8897 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None
(and indicator status):

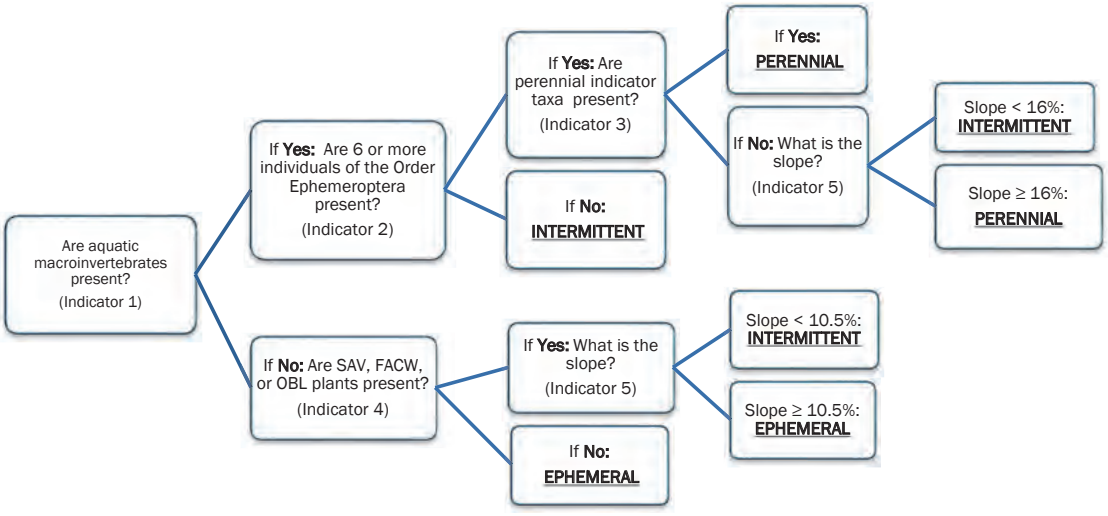
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ 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 # 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

There is no distinct difference 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 4	Coordinates at downstream end (ddd.mm.ss) Lat. 45.82645 N
Reach Boundaries Study area width.	Long. -120.8943 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.5
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 70

% of reach w/any flow (surface or hyporheic) 70

# of pools observed 10

Observations

Observed Wetland Plants (and indicator status): Salix spp (FACW), Juncus effusus (FACW)

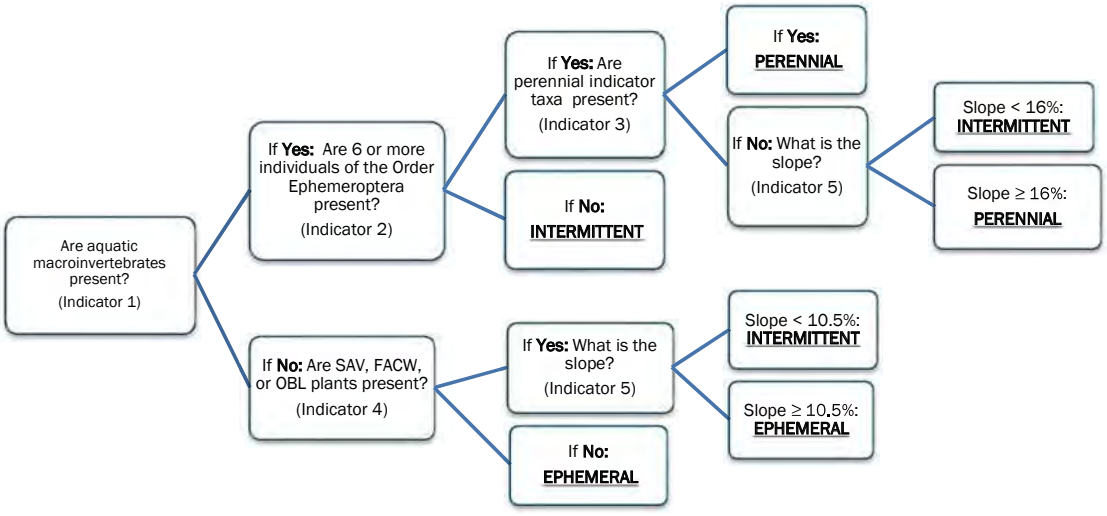
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☒ Yes	☐ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☐ Ephemeral
☒ Intermittent
☐ 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. 45.8317 N
Reach Boundaries Study area width.	Long. -120.875 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1.5
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status): Navarettia intertexta (FACW), Juncus effusus (FACW)

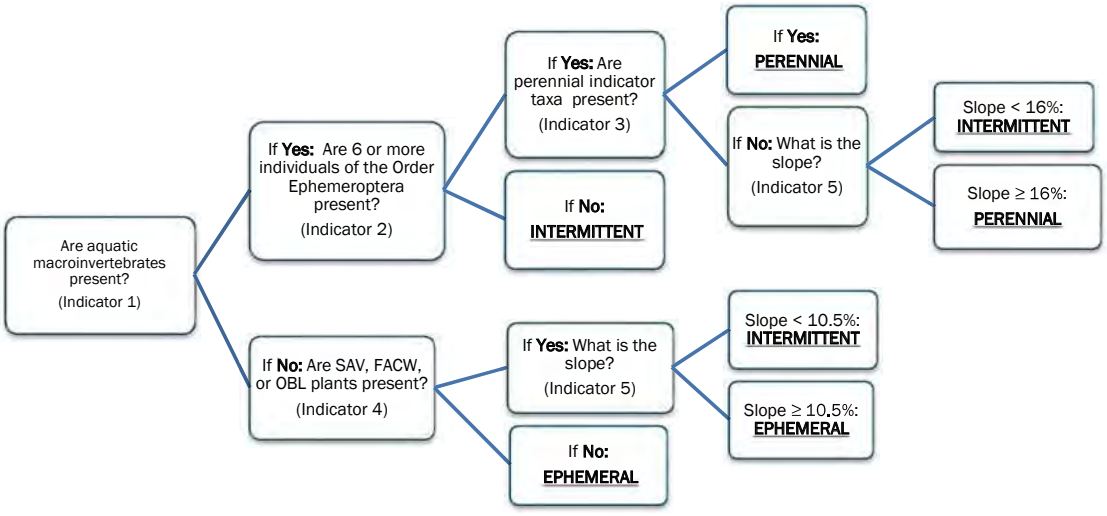
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☒ Yes	☐ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☐ Ephemeral
☒ Intermittent
☐ 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 rose, rushes and pincushion plant.

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

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
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None (and indicator status):

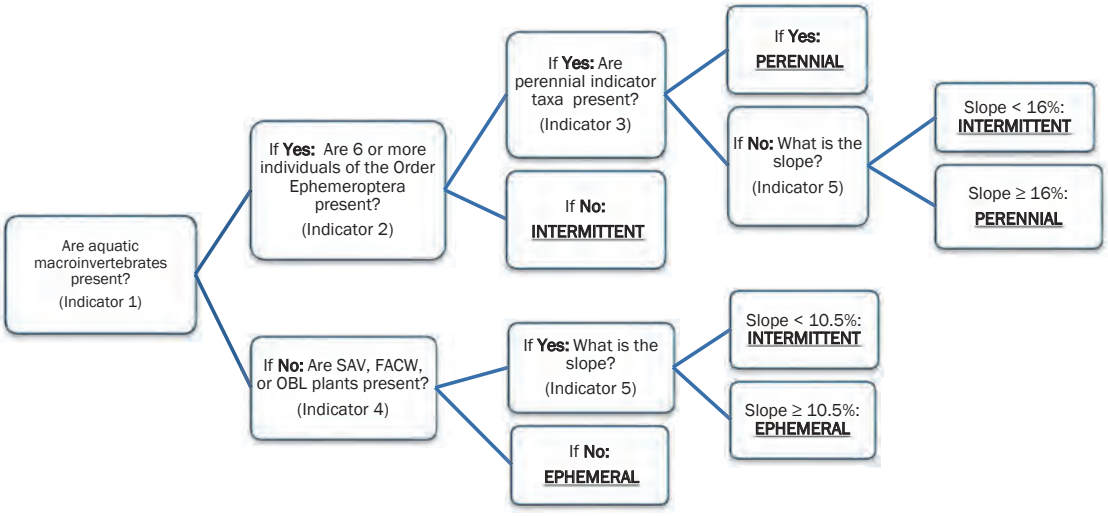
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:

☐ Fish

☐ Amphibians

Finding:

☒ Ephemeral

☐ Intermittent

☐ 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
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None (and indicator status):

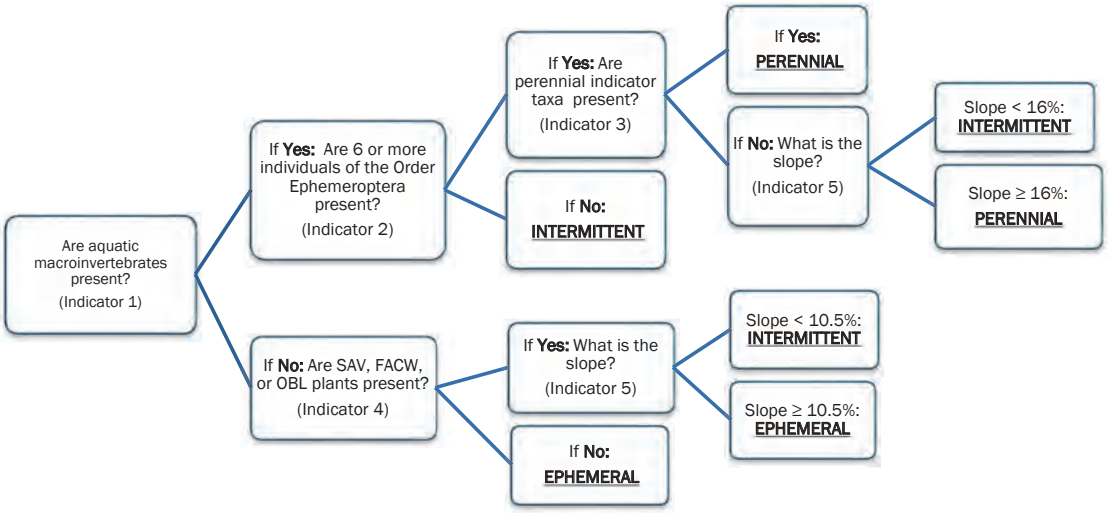
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	4 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ 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
Reach Boundaries Study area width.	Long. 120.8943 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 1
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 50

% of reach w/any flow (surface or hyporheic) 50

# of pools observed 12

Observations

Observed Wetland Plants Salix spp (FACW) (and indicator status):

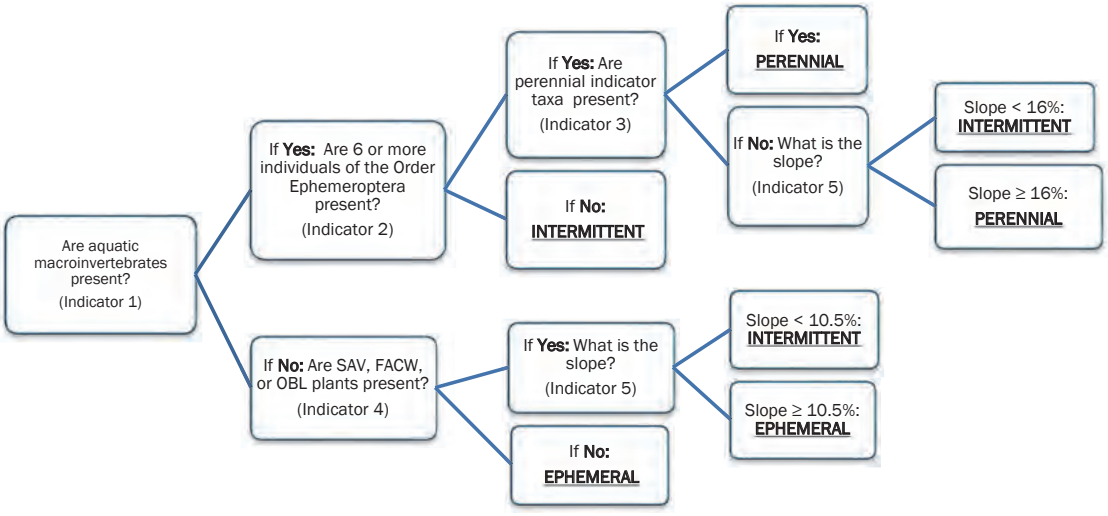
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☐ Ephemeral
☒ Intermittent
☐ 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

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 # 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

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

☐ 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 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
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None (and indicator status):

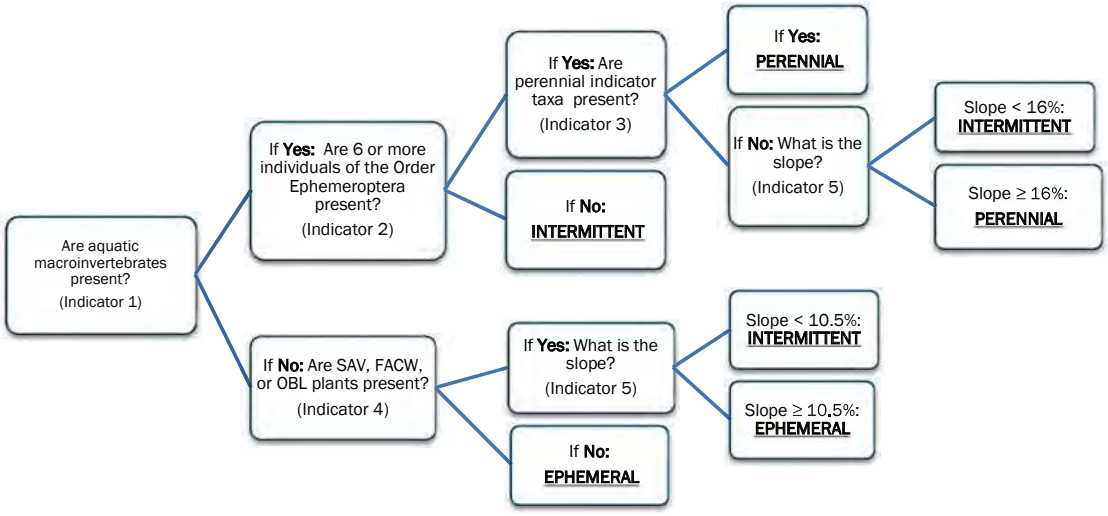
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ 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 # 14

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

Ancillary Information:

☒ Riparian Corridor

☐ Erosion and Deposition

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

☐ 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 8	Coordinates at downstream end (ddd.mm.ss) Lat. 45.8299 N
Reach Boundaries Study area width.	Long. 120.8945 W
Precipitation w/in 48 hours (cm) 1.35	Channel Width (m) 0.3
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None (and indicator status):

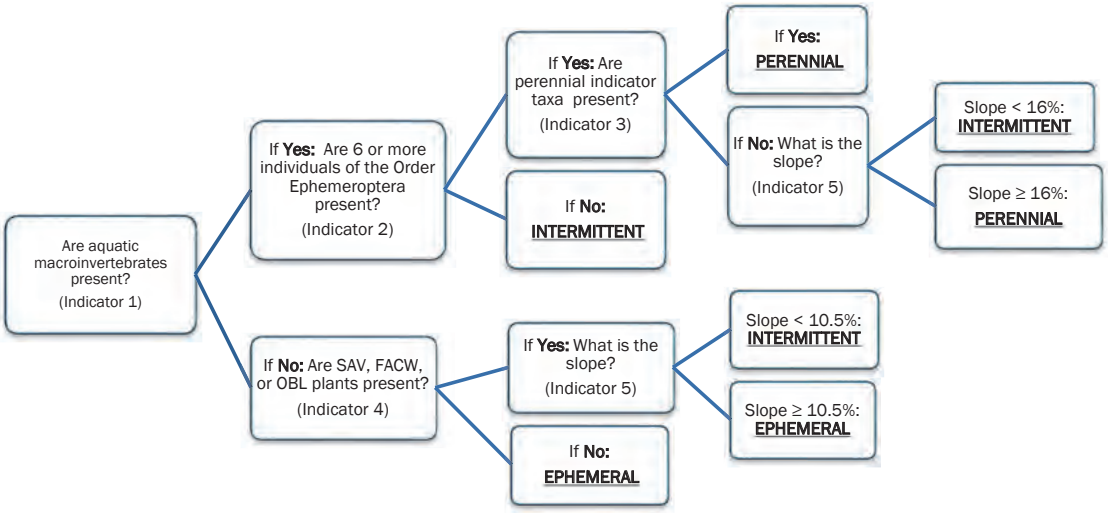
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	3 %	

Conclusions



Single Indicators:

☐ Fish

☐ Amphibians

Finding:

☒ Ephemeral

☐ Intermittent

☐ 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 # 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

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

☐ 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 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
Reach Boundaries Study area width.	Long. 120°51'57.69"W W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 0.3
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None
(and indicator status):

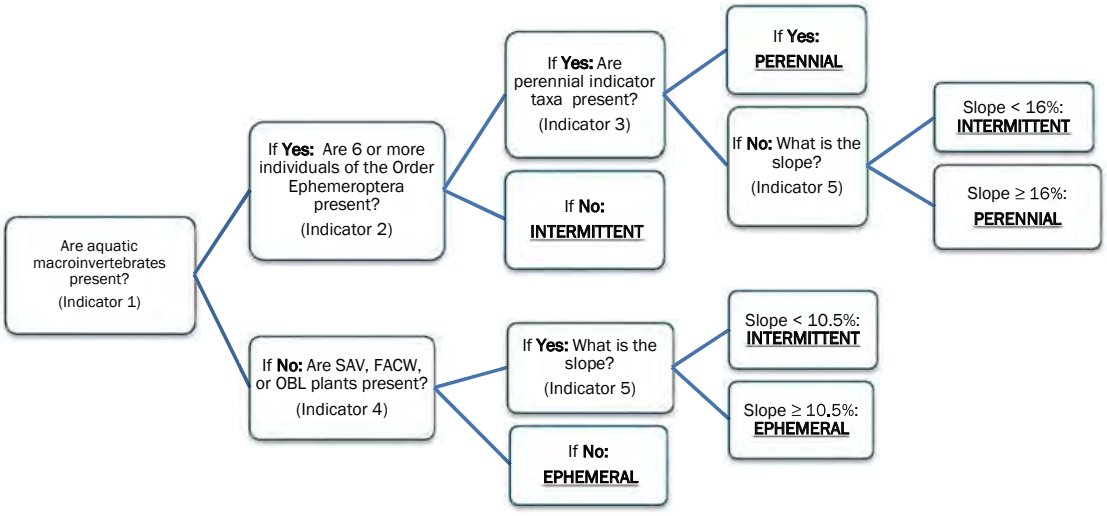
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ 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.

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

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

☐ 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 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
Reach Boundaries Study area width.	Long. 120°52'39.80" W
Precipitation w/in 48 hours (cm) 0	Channel Width (m) 0.3
☒ Disturbed Site / Difficult Situation (Describe in "Notes")	

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants None
(and indicator status):

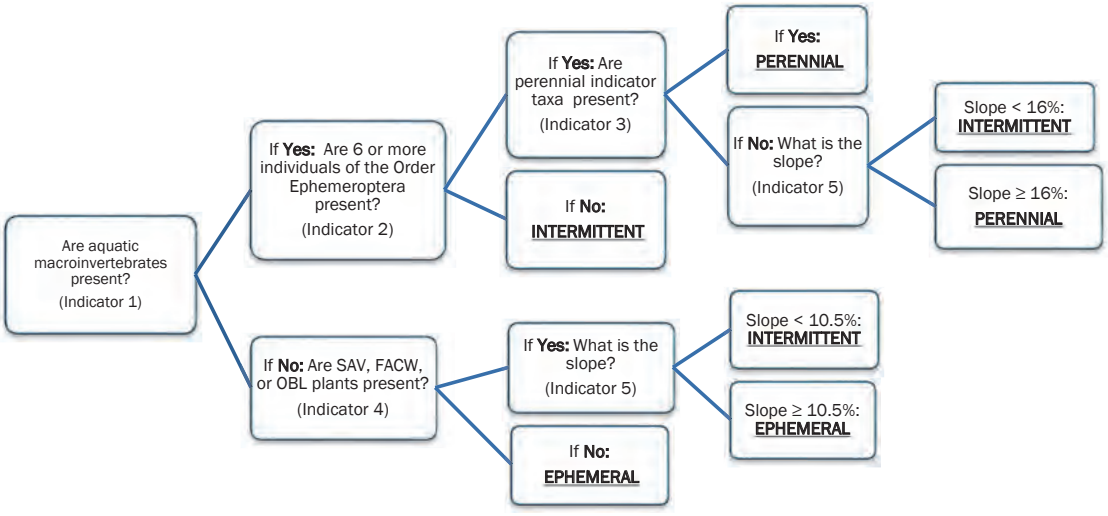
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
None			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ 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.

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

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

☐ Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed
None			

Appendix C. Wetland Datasheets and Rating Forms

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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-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 X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Vernal pool

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Navarretia intertexta*	40	Yes	FACW
2. *Psilocarphus brevissimus*	20	Yes	FACW
3. *Ceratocephala testiculata*	10	No	UPL
4.			
5.			
6.			
7.			
8.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 60 % 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	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	70 (A)		170 (B)
Prevalence Index = B/A =			2.43

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]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-101a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/4	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)**
- X 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 on 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 (minimum of two 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)
- X 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** X **No** ___

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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Ventenata dubia*	60	Yes	UPL
2. *Poa bulbosa*	40	Yes	FACU
3. *Eriogonum niveum*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
	105 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: VP-101b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/3	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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** X

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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Vernal pool

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Navarretia intertexta*	20	Yes	FACW
2. *Deschampsia caespitosa*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	25 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 80 % 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	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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]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-102a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 3

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)**
- X 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 on 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 (minimum of two 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)
- X 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** X **No** ___

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-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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa bulbosa*	70	Yes	FACU
2. *Ventenata dubia*	20	Yes	UPL
3. *Lomatium nudicaule*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: VP-102b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/4	100					Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 5

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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** X

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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Small vernal pool between fields.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Navarretia intertexta*	5	No	FACW
2. *Plagiobothrys scouleri*	40	Yes	FACW
3. *Convolvulus arvensis*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
	50 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 50 % 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	50 (A)		115 (B)
Prevalence Index = B/A =			2.30

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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-107a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)**
- X 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 on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Achillea millefolium*	20	Yes	FACU
2. *Lomatium grayi*	5	No	UPL
3. *Elymus elymoides*	20	Yes	FACU
4. *Taeniatherum caput-medusae*	10	No	UPL
5.			
6.			
7.			
8.			
	55 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 50 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: VP-107b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Plagiobothrys scouleri*	50	Yes	FACW
2. *Navarretia intertexta*	15	Yes	FACW
3. *Myosurus minimus*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
	75 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 25 % 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	10	x 1 =	10
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		140 (B)

Prevalence Index = B/A = 1.87

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)**
- X 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 on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Achillea millefolium*	30	Yes	FACU
2. *Lomatium grayi*	10	No	UPL
3. *Elymus elymoides*	25	Yes	FACU
4. *Madia gracilis*	20	Yes	UPL
5.			
6.			
7.			
8.			
	85 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 20 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: VP-108b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Vernal pool near road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Plagiobothrys scouleri*	30	Yes	FACW
2. *Navarretia intertexta*	30	Yes	FACW
3. *Myosurus minimus*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 30 % 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	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[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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-110a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	50	10YR 4/6	50	C	M	Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 6

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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)**
- X 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 on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus tectorum*	40	Yes	UPL
2. *Ventenata dubia*	40	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 20 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: VP-110b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100					Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Wetland along fence near road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus balticus*	70	Yes	FACW
2. *Poa pratensis*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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-103a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/2	100					Loamy/Clayey	clay loam
14-16	10YR 4/1	100					Loamy/Clayey	clay

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 14		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

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 ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Taeniatherum caput-medusae*	100	Yes	UPL
2. *Bromus japonicus*	80	Yes	FACU
3. *Tragopogon porrifolius*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
	185 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-103b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100					Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ____ **No** X

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Riverine wetland, with obligate plants in the channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Myosurus minimus*	60	Yes	OBL
2. *Plagiobothrys scouleri*	20	Yes	FACW
3. *Eleocharis palustris*	15	No	OBL
4. *Juncus balticus*	15	No	FACW
5. *Rorippa curvisiliqua*	5	No	OBL
6. *Rumex crispus*	5	No	FAC
7.			
8.			
	120 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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	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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]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-104a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	80	10YR 4/6	20	C	M	Loamy/Clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 2	**Wetland Hydrology Present?**	**Yes** X **No** ___

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 X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Lomatium nudicaule*	5	No	UPL
2. *Eriogonum compositum*	15	No	UPL
3. *Bromus inermis*	10	No	FACU
4. *Bromus tectorum*	20	Yes	UPL
5. *Centaurea cyanus*	40	Yes	FACU
6. *Tragopogon porrifolius*	5	No	UPL
7.			
8.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-104b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	100					Loamy/Clayey	silt loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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-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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Equisetum hyemale*	10	No	FACW
2. *Plagiobothrys scouleri*	10	No	FACW
3. *Phleum pratense*	20	No	FACU
4. *Juncus ensifolius*	70	Yes	FACW
5.			
6.			
7.			
8.			
	110 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	110 (A)		260 (B)
Prevalence Index = B/A =			2.36

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]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-105a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	70	10YR 3/6	30	C	M	Loamy/Clayey	clay with sand inclusion

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6	**Wetland Hydrology Present?**	**Yes** X **No** ___

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-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 ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

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

% Bare Ground in Herb Stratum 0 % 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: 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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-105b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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 X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Artificially created pond. Berm in wet meadow.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Yes	FACW
2. *Plagiobothrys scouleri*	30	Yes	FACW
3. *Equisetum hyemale*	10	No	FACW
4. *Rumex crispus*	5	No	FAC
5. *Eleocharis palustris*	30	Yes	OBL
6.			
7.			
8.			
	125 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

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[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Loamy/Clayey	clay

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ? Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X 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)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two 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)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 2
Water Table Present?	Yes	___	No	X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

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-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 ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland plot

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus japonicus*	80	Yes	FACU
2. *Achillea millefolium*	10	No	FACU
3. *Taeniatherum caput-medusae*	10	No	UPL
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % 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: 0.0% (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[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:

SOIL

Sampling Point: WT-106b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Loamy/Clayey	clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on 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 (minimum of two 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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

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 X___ No Date of training_____

HGM Class used for rating_____ 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 _____

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
X_____**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
Vernal Pools X	(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	

Wetland name or number VP-101

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number VP-101

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 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	5
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 > $^2/_3$ of area — points = 5 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	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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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	0
Total for D 3 — 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 VP-101

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 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 unconstricted 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*

VP-101

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

VP-101

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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		
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	
Total for R 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 VP-101

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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 VP-101

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 VP-101

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 VP-101

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland — points = 1 All other conditions — 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	

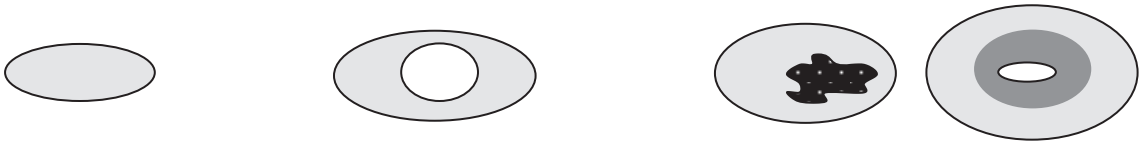
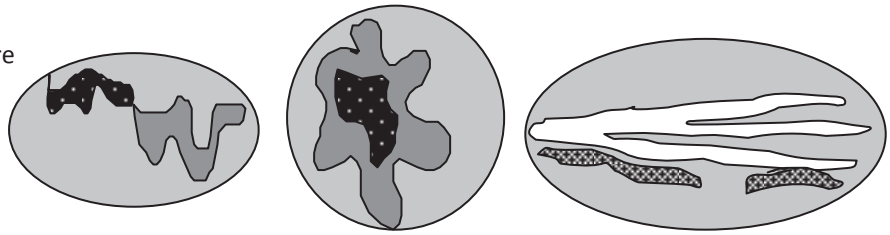
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) — points = 2 Surface flooding problems are in a sub-basin farther down-gradient — points = 1 No flooding problems anywhere downstream — 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 VP-101

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 3 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 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.*  **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__ 0

Wetland name or number VP-101

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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*

Wetland name or number VP-101

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	Yes
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	II

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 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 x___ No Date of training_____

HGM Class used for rating_____ 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 _____

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
x_____**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
Vernal Pools x	**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	

Wetland name or number VP-102

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number VP-102

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 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	5
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 > $^2/_3$ of area — points = 5 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	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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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	0
Total for D 3 — 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 VP-102

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 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 unconstricted 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*

VP-102

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? A*nswer YES if there is a TMDL for the drainage in which wetland is found*. Yes = 2 No = 0	
Total for R 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*

VP-102

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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		
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	
Total for R 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*

VP-102

Wetland name or number_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 VP-102

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 VP-102

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

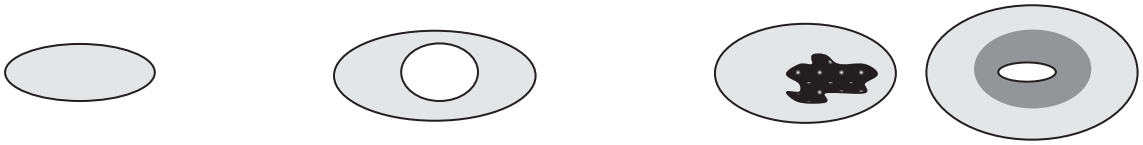
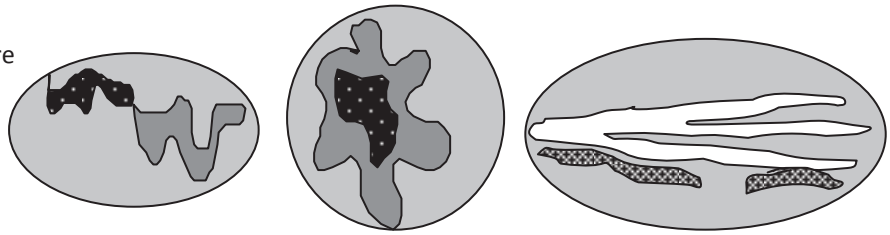
Rating of Landscape Potential If score is:___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 VP-102

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 3 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 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.*  **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__ 0

Wetland name or number VP-102

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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*

Wetland name or number VP-102

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	Yes
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) - The wetland is within the 100 year floodplain of a river or stream - Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species - 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	II

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 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 x___ No Date of training_____

HGM Class used for rating_____ 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 _____

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	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
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	

Wetland name or number WT-103

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number WT-103

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 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	5
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 > $^2/_3$ of area — points = 5 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	1
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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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 (*answer YES if there is a TMDL for the drainage or basin in which the wetland is found*)? Yes = 2 No = 0	0
Total for D 3 — 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*

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 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 unconstricted 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 pondingpoints = 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*

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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	
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	
Total for R 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*

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 WT-103

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 WT-103

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland — points = 1 All other conditions — 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	

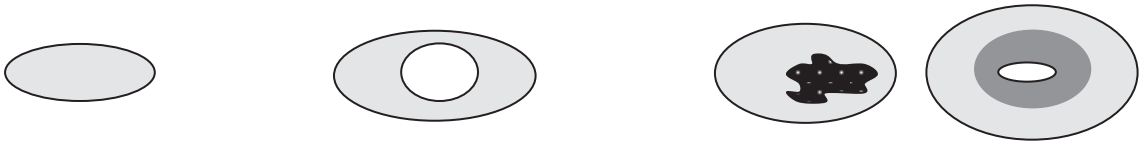
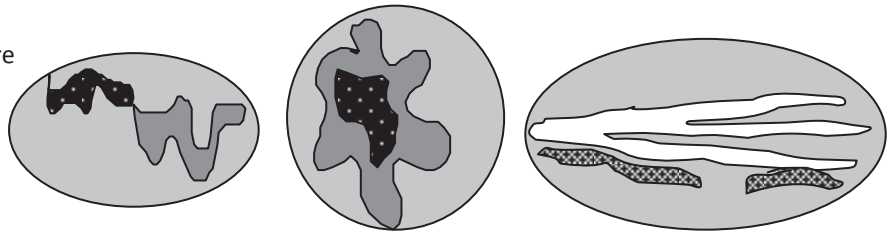
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) — points = 2 Surface flooding problems are in a sub-basin farther down-gradient — points = 1 No flooding problems anywhere downstream — 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 WT-103

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover x___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) ____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. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 3 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 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.*  **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 WT-103

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	

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 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 x___ No Date of training_____

HGM Class used for rating Riverine 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 _____

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	
	Circle the appropriate ratings			
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	4	5	6	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 *Circle the appropriate category*
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	

Wetland name or number WT-104

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number WT-104

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 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	
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area — points = 5 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. 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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	
Total for D 1 — 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 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	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 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	
Total for D 2 — Add the points in the boxes above	

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	
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	
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	
Total for D 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*

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 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 unconstricted 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 pondingpoints = 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. 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	
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*

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	1
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland 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** ___**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 R 2.1-R 2.4? Source_____ Yes = 1 No = 0	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? *Answer YES if there is a TMDL for the drainage in which wetland is found*. Yes = 2 No = 0	0
Total for R 3 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*

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	4
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 5 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*

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	0
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** ___**0 = L** *Record the rating on the first page*

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 WT-104

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 WT-104

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

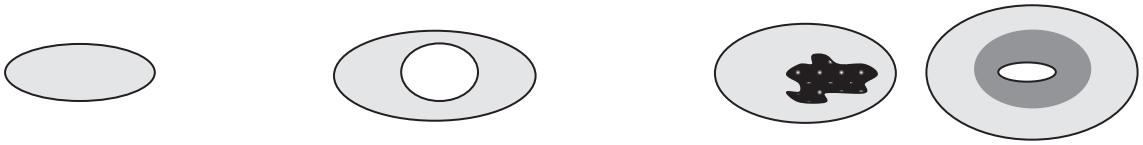
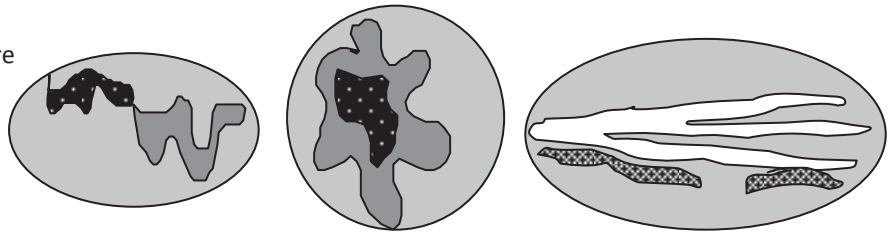
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 WT-104

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover x___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) ____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. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 6 Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	1
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.*  **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__ 2

Wetland name or number WT-104

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 x___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* 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? *Choose the highest score that applies to the wetland being rated* 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 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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	

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 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 x___ No Date of training_____

HGM Class used for rating Riverine 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 _____

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	
	Circle the appropriate ratings			
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	4	5	6	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 *Circle the appropriate category*
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	

Wetland name or number WT-105

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number WT-105

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 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	
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area — points = 5 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. 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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	
Total for D 1 — 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 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	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 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	
Total for D 2 — Add the points in the boxes above	

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	
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	
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	
Total for D 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*

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 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 unconstricted 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 pondingpoints = 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. 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	
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_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	1
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland 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** ___**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 R 2.1-R 2.4? Source_____ Yes = 1 No = 0	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? *Answer YES if there is a TMDL for the drainage in which wetland is found*. Yes = 2 No = 0	0
Total for R 3 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*

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	4
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 5 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*

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	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_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 WT-105

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 WT-105

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

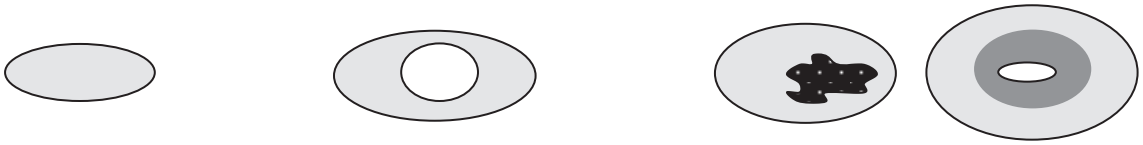
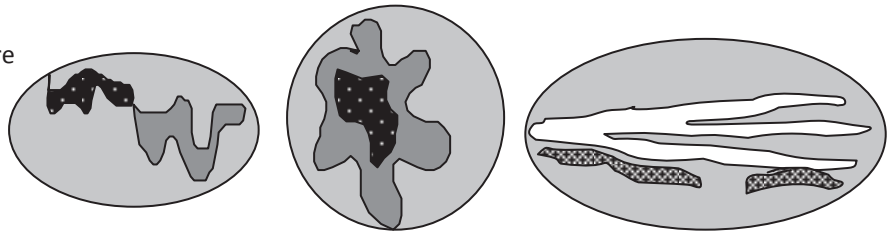
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 WT-105

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x ___Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover x ___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) ____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. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 4 Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	1
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.*  **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__ 2

Wetland name or number WT-105

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 x___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* 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? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: points = 2 x It has 3 or more priority habitats within 100 m (see Appendix B) x It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) x It is mapped as a location for an individual WDFW species x It is a Wetland of High Conservation Value as determined by the Department of Natural Resources x 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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	

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 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 x___ 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 _____

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	
	Circle the appropriate ratings			
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	4	5	6	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 *Circle the appropriate category*
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	

Wetland name or number WT-106

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number WT-106

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 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	5
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 > $^2/_3$ of area points = 5 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	1
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 > ½ total area of wetland points = 3 Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0	3
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 (*answer YES if there is a TMDL for the drainage or basin in which the wetland is found*)? Yes = 2 No = 0	0
Total for D 3 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*

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 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 unconstricted 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 pondingpoints = 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	4
Total for D 4 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*

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*

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 No = 1	
Total for R 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*

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	
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	
Total for R 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_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 WT-106

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 WT-106

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

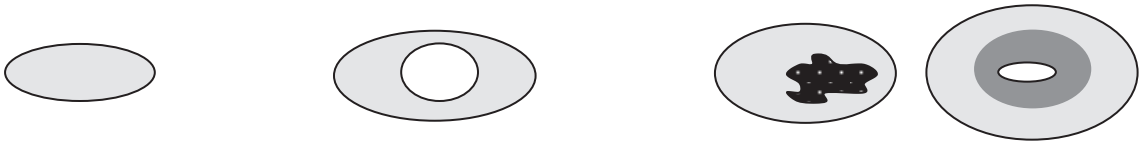
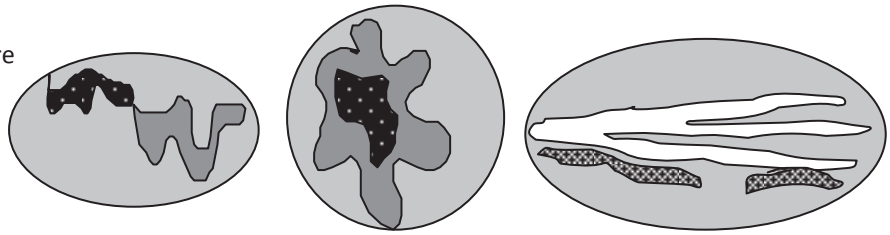
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 WT-106

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 5 Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	1
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.*  **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__ 2

Wetland name or number WT-106

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 x___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☐ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☐ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	

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 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 x___ No Date of training_____

HGM Class used for rating_____ 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 _____

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
x_____**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
Vernal Pools x	**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	

Wetland name or number VP-107

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number VP-107

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 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	5
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 > $^2/_3$ of area — points = 5 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	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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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	0
Total for D 3 — 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 VP-107

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 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 unconstricted 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*

VP-107

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

VP-107

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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		
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	
Total for R 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*

VP-107

Wetland name or number_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 VP-107

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 VP-107

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

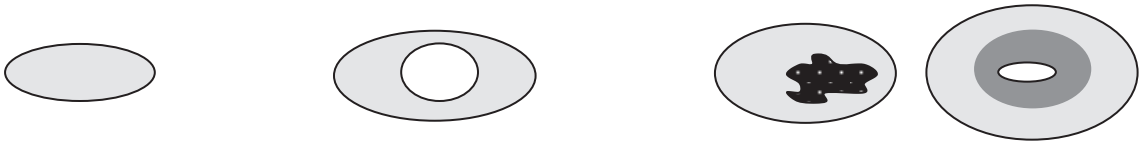
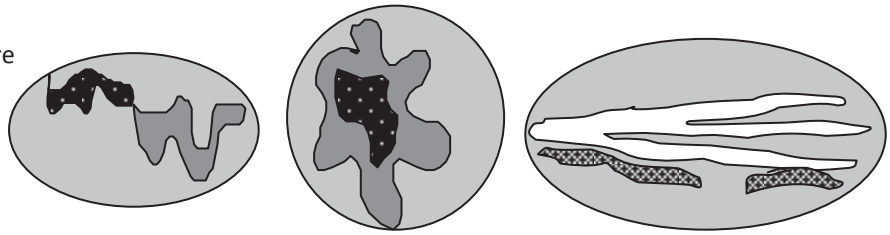
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 VP-107

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 3 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 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.*  **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__ 0

Wetland name or number VP-107

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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*

Wetland name or number VP-107

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	Yes
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) - The wetland is within the 100 year floodplain of a river or stream - Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species - 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	II

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 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 x___ No Date of training_____

HGM Class used for rating_____ 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 _____

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
x_____**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
Vernal Pools x	**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	

Wetland name or number VP-108

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number VP-108

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 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	5
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 > 2/3 of area — points = 5 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	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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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	0
Total for D 3 — 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 VP-108

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 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 unconstricted 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*

VP-108

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

VP-108

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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		
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	
Total for R 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 VP-108

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 VP-108

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 VP-108

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland — points = 1 All other conditions — 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	

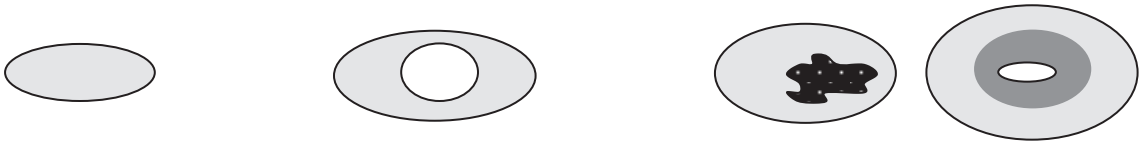
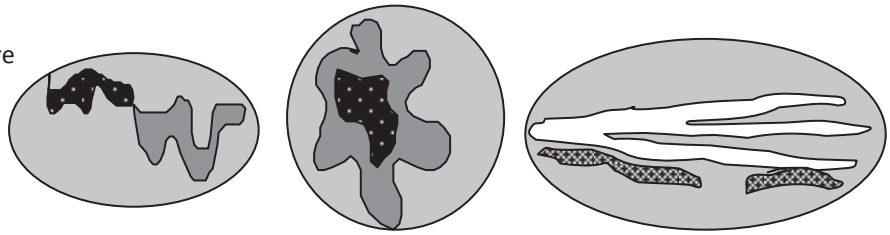
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) — points = 2 Surface flooding problems are in a sub-basin farther down-gradient — points = 1 No flooding problems anywhere downstream — 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 VP-108

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 4 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 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.*  **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__ 0

Wetland name or number VP-108

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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*

Wetland name or number VP-108

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	Yes
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	II

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 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 x___ No Date of training_____

HGM Class used for rating_____ 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 _____

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
x_____**Category IV** – Total score = 9-15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
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	4	4	5	13

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 *Circle the appropriate category*
Vernal Pools x	**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	

Wetland name or number VP-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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	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.*

Wetland name or number VP-110

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 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	5
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 > $^2/_3$ of area — points = 5 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	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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	1
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	0
Total for D 3 — 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*

VP-110

Wetland name or number_____

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 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 unconstricted 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*

VP-110

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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 >$^1/_3$ 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	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): 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 Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland points = 0	
Total for R 1 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*

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	
R 2.2. Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 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	
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants Yes = 1 No = 0	
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	
Total for R 2 Add the points in the boxes above	

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	
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 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	
Total for R 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*

VP-110

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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	
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	
Total for R 5 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*

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	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 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*

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	
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	
Total for R 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*

VP-110

Wetland name or number_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.	Points (only 1 score per box)
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. *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*. Cover of herbaceous plants is > 90% of the vegetated area — points = 6 Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area — points = 4 Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area — points = 3 Other plants that are not aquatic bed > $^{2}/_{3}$ wetland — points = 3 Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area — points = 1 Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* 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*

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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 VP-110

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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 VP-110

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows*. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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	

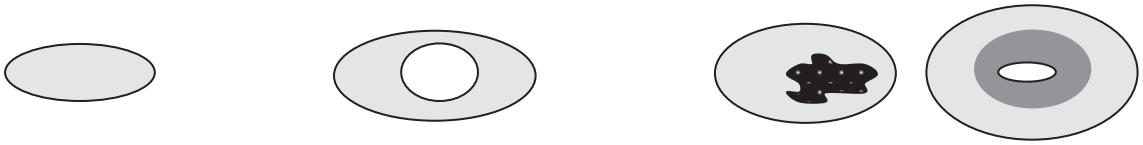
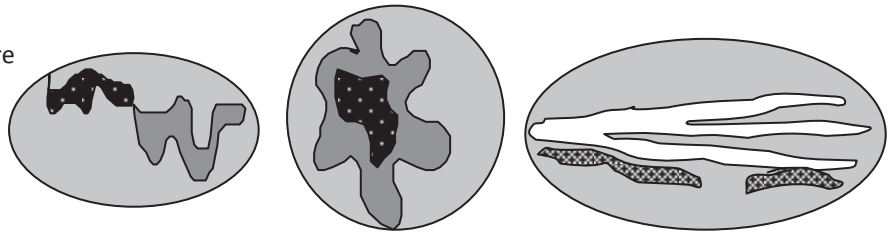
Rating of Landscape Potential If score is: ___**1 = M** ___**0 = L** *Record the rating on the first page*

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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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 VP-110

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 >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed x___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) ____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	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 ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? ***A**nswer 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 ¼ 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 ft^2. D*ifferent 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 3 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 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.*  **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__ 0

Wetland name or number VP-110

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* x Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____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 ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	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: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % > 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. *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 50 = 50 % 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. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — 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? *Choose the highest score that applies to the wetland being rated* 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 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*

Wetland name or number VP-110

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 *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** 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. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool*. ☒ The soil in the wetland is shallow [< 1 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 **SC 1.1** No = **Not a vernal pool** 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**	Yes
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**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? ☒ The wetland has a conductivity > 3.0 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. **OR** 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 ¾ 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 = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) 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** 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** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** 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**	**Cat. I**

SC 4.0 Bogs and Calcareous Fens 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.*** 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** 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** 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** **NOTE:** 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. SC 4.4. Is an area with peats or mucks forested (> 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** 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** 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 ($CaCO_3$) 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**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands 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*) • The wetland is within the 100 year floodplain of a river or stream • Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species • 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)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
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**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
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**	**Cat. II**
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**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	II

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.

Wetlands and Other Waters of the United States Delineation Report for the Carriger Solar Project

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November 30, 2020

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List of Tables

List of Abbreviations and Acronyms

AMSL	above mean sea level
E & E	Ecology and Environment, Inc., member of WSP
GPS	Global Positioning System
GIS	global information system
HPA	Hydraulic Project Approval
HUC	hydrologic unit code
met station	meteorological station
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
PEM	palustrine emergent
PEM1C	palustrine emergent wetland, persistent vegetation, seasonally flooded
PEM1F	Emergent, Persistent Vegetation, Semipermanently Flooded
PEM2F	Palustrine, Emergent, Nonpersistent Vegetation, Semipermanently Flooded
Project	Carriger Solar Project
SP	soil pit
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UVP	upland verification pit
WDFW	Washington Department of Fish and Wildlife
WDOE	Washington Department of Ecology
WETS	wetlands

1 Introduction

Ecology and Environment, Inc., member of WSP (hereafter referred to as E & E) performed a delineation of wetlands and other waters of the United States for the Cypress Creek Renewables, LLC and Carriger Solar, LLC Carriger Solar Project (Project; see Appendix A, Figure 1). The Project Area consists of four sites totaling 1,097.2 acres (parcel numbers 04150100000500, 04151200000200, 04151100000500, 04151100000100, 04150100000300, 04150100000100, 04160600000400, 05152500000900, 05152500000500, 05152514120300, 05152514120400, 05152514120200, 05152514120100, 05152600000500, 05153500000900, 05153500000200, 05153500001200, 05153500001300, 05152600000600, and 05153500001500, and 0515250009900) (see Appendix A; Figure 2). Sites are located along Knight Road, Mesecher Road W, Fish Hatchery Road, Pine Forest Road, Tucker Hill Road, and Butts Road. The Project Area is in Township 5 North, Range 16 East; Township 5 North, Range 15 East; Township 4 North, Range 15 East; and Township 4 North, Range 14 East near the city of Goldendale, Klickitat County, Washington. The Project Area is in the Middle Columbia, Columbia River Basin below the confluence of the Snake River Basin to Bonneville Dam (170701060303 Hydrologic Unit Code [HUC]). The purpose of the Project is to expand Cypress Creek Renewables 's solar renewable energy footprint within Klickitat County.

The Project Area is composed primarily of agricultural and residential land uses, with some forestland on the eastern portions of the Project Area. The surrounding area exists as rural residential and agricultural land uses. Six wetlands were identified within the Project Area and account for approximately 1.57 acres. Five streams cross the Project Area and account for an additional 20,120.26 linear feet of waterway within the Project Area (see Appendix A, Figures 3 through 7). The Project is located within the U.S. Army Corps of Engineers (USACE) Seattle District boundary. The Project is located within two ecoregions and was delineated using both Arid West and Western Mountains Valleys and Coast Regional Supplements (USACE 2008, 2010).

The wetlands and other waters identified within the Project Area are under the jurisdiction of the Washington Department of Ecology (WDOE) and USACE. No placement of fill may occur without their written permission. If impacts on on-site wetlands or other waters is proposed, these activities may be authorized under the USACE 2017 Nationwide Permit Program (NWP) 51 – Land-Based Renewable Energy Generation Facilities.

2 Methods

Prior to field delineation, E & E reviewed publicly available datasets to determine the locations of potential wetlands, streams, or other waters. Digital base maps were prepared with georeferenced aerial imagery that included: Study Area boundaries, National Resources Conservation Service (NRCS) Soils, U.S. Fish and Wildlife Services (USFWS) National Wetland Inventory (NWI), and National Hydrology Dataset (NHD). Based on the results of the desktop review, field reconnaissance-level surveys were conducted to develop general siting constraints.

The methods used for determining and delineating wetlands and other waters adhere to those found in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West and Western Mountains Valleys and Coast Regional Supplements (USACE 2008, 2010), and WDOE administrative rules for wetland delineation report requirements and jurisdictional determinations (Washington Administrative Code 173-22-035). Wetlands and open water boundaries were determined by the disappearance of one or more of their diagnostic characteristics. Ordinary high water marks defined the outermost regulatory boundaries of other waters. Streams were classified according to the classification scheme of Cowardin et al. (1979). Wetland communities were classified according to the classification scheme of hydrogeomorphic (HGM) approach, although they are also assigned a Cowardin classification (Brinson 1993).

A Global Positioning System (GPS) unit with submeter accuracy was used, in addition to aerial photography and topographic figures, for the survey. Geographic information system (GIS) software was used to determine wetland dimensions and produce a map of the Project Area showing wetlands and other waters.

2.1 Survey

Two E & E biologists, Rachel Locke and Bridget Wojtala, conducted an on-site investigation to determine the extent and quality of wetlands and other waters located within the boundaries of the Project Area. On-site surveys were conducted from April 29 through May 1, 2020, and were completed on May 5, 2020. See Appendix D for staff qualifications.

Surveys consisted of systematically traversing the subject property and viewing adjacent properties from roadways and public access areas. E & E collected data

points within waters and adjacent upland areas to demonstrate differences between these two community types and to support delineation of the waters. Sample plots were established within each potential wetland within the Project Area, including all potential waters identified by the NWI and NHD. Complete data for each plot were collected and recorded in USACE's Routine Wetland Determination Data Forms pertaining to the applicable USACE Regional Supplement.

2.2 Determination

Vegetation

To determine the presence of hydrophytic vegetation, the dominant species in each major vegetative stratum (e.g., tree, shrub/sapling, herbaceous, and woody vine) were identified and recorded. Each plant was then assigned a wetland indicator status according to Lichvar et. al. (2016). Indicators are summarized in Table 2-1.

Table 2-1 Wetland Indicator Status

Indicator Status	Designation	Definition
Obligate (OBL)	Hydrophyte	Almost always occurs in a wetland.
Facultative Wetland (FACW)	Hydrophyte	Usually occurs in a wetland, but may occur in a non-wetland.
Facultative (FAC)	Hydrophyte	Occurs in wetlands and non-wetlands.
Facultative Upland (FACU)	Non-hydrophyte	Usually occurs in non-wetland, but may occur in a wetland.
Upland (UPL)	Non-hydrophyte	Almost never occurs in a wetland.

Source: Lichvar et al. 2016

A no indicator (NI) designation represents a species where not enough information is available to assign an indicator status. A not listed (NL) designation represents a species where identification was not determined sufficiently enough to assign an indicator status. Once the indicator status is assigned to each dominant species, E & E performed the percent dominance test according to the protocol outlined within the applicable Regional Supplement to determine if the plot meets the criterion for hydrophytic vegetation (USACE 2012).

Soils

Soils were examined using a tile spade shovel, or "sharpshooter," to a depth of 30 centimeters (12 inches). Wherever disturbance of the soils was evident, due to past excavation or fill activity, the soil characterization was performed in adjacent, undisturbed areas within the potential wetland. Soils were characterized at a depth immediately below the A-horizon or at 30 centimeters (12 inches), whichever was shallower. Soil colors were identified using the Munsell Soil Color Chart (Munsell Color 2010), and other characteristics such as the presence of mottles and soil texture were recorded. Hydric characteristics such as organic soil layers, gleiing, and oxidized rhizospheres were noted where they occurred. The soils were evaluated both within and outside the wetland boundaries.

Hydrology

The Wetlands Delineation Manual provides guidelines for determining the presence of wetland hydrology (Environmental Laboratory 1987). In general, the criteria for wetland hydrology are met if the area is inundated or saturated at the soil surface during the growing season for a time sufficient to develop hydric soils and support hydrophytic vegetation. In some instances, it is necessary to use other field characteristics to identify wetland hydrology. These characteristics may include water staining, sediment deposits, drainage patterns, or drift lines. Hydrologic characteristics, as well as the depth of surface water or depth of soil saturation, were recorded for each wetland area.

Delineation

If the soils, hydrology, and vegetation at a survey point indicated that it was within a wetland, the boundary of the wetland was determined, and it was flagged with wetland delineation tape. The approximate boundary was recorded on site maps, and the flagged boundary was surveyed using a GPS unit. GIS software was used to determine wetland dimensions and produce a map of the Project Area showing wetlands and other waters of the United States (see Appendix A, Figures 3 through 7).

2.3 Washington State Wetland Rating

Each wetland was categorized in accordance with WDOE's updated Wetland Rating System for Western Washington (Rating System) (Hruby 2014). WDOE has established four primary categories of wetland quality that are based on the physical characteristics of water quality, hydrology, and habitat functions within the wetland and buffers. Using this system, wetlands are given a score based on the functions provided by the wetland and are classified as Category I through IV. Based on the Rating System, wetlands were assigned corresponding buffers per Klickitat County Critical Areas Ordinance (Klickitat County 2013) (see Table 2-2).

Table 2-2 Washington State Wetland Rating System

Score	Category	Description	Buffer (feet)	Buffer[1] (feet)
23 or greater	I	Represents a unique or rare wetland type, are more sensitive to disturbance, are relatively undisturbed, or provide a high level of functions.	300	150
20-22	II	Represents difficult to replace wetlands, provide high levels of some functions, and though less rare than Category I wetlands, require a relatively high level of protection.	200	100
16-19	III	Represents wetlands with a moderate level of functions and can often be adequately replaced.	75	50
Fewer than 16	IV	Represents wetlands with the lowest quality of functions and are often heavily disturbed.	75	37.5

Note:
1 Buffer width if it is demonstrated that wetland functions and values will not be reduced.

2.4 Literature Review

USGS Topographic Map

According to the United States Geological Survey (USGS) 7.5-minute Centerville Quadrangle maps (2013, 2014) (see Appendix A, Figure 8), the elevation of the Project Area ranges from approximately 1,500 feet above mean sea level (AMSL) in the southern portion to approximately 2,000 feet AMSL in the northern portion. The local topography generally slopes down to the south/southwest.

The nearest surface waterbodies are Bloodgood Creek located approximately 1 mile to the east, Blockhouse Creek located approximately 1.17 miles to the west, Mill Creek located approximately 1.36 miles to the west, and Little Klickitat River located 2.15 miles to the south of the Project Area.

Based on the local topography and proximity of surface waterbodies, local groundwater flow is presumed to be to the south/southwest. However, local sub-surface geologic and man-made features can affect groundwater flow; therefore, this groundwater flow interpretation is only an estimate based on surface observations. Review of water well records filed with the USGS Washington Water Science Center indicate that depth to groundwater in the Project Area may be approximately 150 feet below ground surface.

National Wetland Inventory and National Hydrography Dataset

The NWI (USFWS 2015) and NHD (USGS 2015) both indicate the presence of wetlands and non-wetland waters in the Project Area (see Appendix A, Figures 9 and 10). Six streams are depicted in the NWI and NHD maps within Sites 1, 2, and 4. One wetland feature is depicted in the Project Area within Site 1. One wetland feature is depicted outside of the Project Area, in the Survey Area within Site 2.

Within Site 1, one perennial stream is depicted on the eastern portion of the Project Area extending into Site 2, this stream is mapped as Stream 1. One freshwater emergent wetland is depicted abutting this stream, this wetland feature is mapped as Wetland A. Two additional intermittent streams are depicted in Site 1 on the western portion of the Project Area, one stream is mapped as Stream 2. The western most NHD line was deemed to not be a stream feature.

Two perennial streams are depicted in Site 2, the western stream a continuation of Stream 1 from Site 1. The eastern stream is mapped as Stream 3. One freshwater pond is depicted abutting Stream 3 outside of the Project Area, within the Survey Area.

One intermittent stream is depicted bisecting Site 3. This stream is depicted continuing north to bisect Site 4.

A perennial stream is depicted in the westernmost portion of Site 4. This stream branches in the southern portion of the Site, continuing west in the Site as intermittent, and north as perennial. One intermittent stream continuing north from Site 3 crosses the Project Area and reenters to the west. A perennial stream continues north from Site 2 and crosses the western portion of Site 3, branching at this northernmost portion in the Site to continue north as intermittent and west as perennial.

USGS Soil Survey

Review of the Web Soil Survey indicates that the Project Area is underlain by 14 soil map units (NRCS 2019; see Appendix A, Figure 11). One soil type, Munset stony silty loam, is listed as hydric; and one soil type, Setnum silt loam, is listed as having a minor hydric component. All soil types within the Project Area are listed in Table 2-3.

Table 2-3 Soil Types Mapped in Survey Area

Symbol	Soil Type	Status	Percent Hydric	Acres in Survey Area	Percent in Survey Area
11A	Xerands, low precipitation, 25% to 45% slopes	Not Hydric	0	6.8	0.5
12D	Lyville boulder loam, 2% to 20% slopes	Not Hydric	0	73.9	5.6
23	Gunn loam, 2% to 8% slopes	Not Hydric	0	125	9.5
23A	Gunn stony loam, 8% to 30% slopes	Not Hydric	0	21.2	1.6
23B	Gunn loam, 8% to 30% slopes	Not Hydric	0	5	0.4
25A	Leidl extremely cobbly ashy loam, 2% to 30% slopes	Not Hydric	0	90.5	6.9
30B	Rocky-Lorena complex, 2% to 15% slopes, extremely stony	Not Hydric	0	43.4	3.3
69	Goldendale silt loam, basalt substratum, 2% to 5% slopes	Not Hydric	0	282.7	21.5
69A	Goldendale silt loam, balsalt substratum, 5% to 10% slopes	Not Hydric	0	21.5	1.6
93	Goldendale silt loam, 2% to 5% slopes	Not Hydric	0	201.1	15.3
93A	Goldendale silt loam, 5% to 10% slopes	Not Hydric	0	210.2	16
93B	Goldendale silt loam, 10% to 15% slopes	Not Hydric	0	71.9	5
97	Munset stony silt loam, 0% to 5% slopes	Not Hydric	90	146	11.1
97A	Setnum silt loam, 0% to 3% slopes	Not Hydric	5	15.8	1.2

Sensitive Wildlife and Plants

The Washington Department of Fish and Wildlife's (WDFW's) Priority Habitats and Species database online mapper was utilized to determine if priority habitat and/or state threatened or endangered species occur on or near the Project Area (WDFW 2009). According to the WDFW Priority Habitats and Species web mapper, the northern spotted owl (*Strix occidentalis*), sharp-tailed snake (*Contia tenuis*), and western gray squirrel (*Sciurus griseus*) habitat or species may occur within the Project Area. According to the WDFW Priority Habitats and Species

web mapper, oak forest and oak/pine mixed forest Priority Habitat may occur within the northeastern portion of Site 2.

Preferred habitat for the northern spotted owl includes ponderosa pine, Douglas-fir, and old growth, mature forests. Northern spotted owls may occur within the Project Area.

Preferred habitat for the sharp-tailed snake includes rocky forest openings dominated by Garry oak and riparian deciduous woodland characterized by woody debris and ponderosa pine, oak, or shrub-steppe. Suitable habitat for the sharp-tailed snake does not exist within the Project Area.

Preferred habitat for the western gray squirrel includes transitional forests of white oak, pondersa pine, and Douglas-fir. Western gray squirrels may occur within the Project Area.

Federal Emergency Management Agency Flood Insurance Rate Map

The Federal Emergency Management Agency produces Flood Insurance Rate Maps, which show the locations of predictable floodplain during precipitation flood events. There are no 100-Year Flood Zones located within the Project Area (see Appendix A, Figure 12).

2.5 Precipitation Analysis

The precipitation data analyses provided in this section were utilized to inform the assessment of hydrologic conditions in the Project Area during the times of data collection. This section documents precipitation amounts prior to and during the months in which wetland field surveys were conducted in April and May 2020.

E & E analyzed precipitation data from two National Weather Service meteorological stations (met stations): the Goldendale, Washington and the Goldendale 4.2 NNW, Washington meteorological stations. Both stations are located within 5 miles of the center of the Project Area. Wetlands (WETS) Tables were obtained from the Goldendale, Washington, station because it maintains long-term data. E & E used recently observed precipitation data from the Goldendale 4.2 NNW, Washington, meteorological station, due to missing 2020 precipitation data from Goldendale, Washington, station. Table 2-4 displays the daily precipitation during the survey and two weeks prior.

WETS tables are provided by the NRCS National Water and Climate Center for met stations with long-term data (more than 30 years) to define thresholds for normal monthly precipitation. As with most WETS Tables, the thresholds of normality are based on data collected from 1971 through 2000. These thresholds are set such that the lowermost 30 percent of values is abnormally low, and the uppermost 30 percent of values is abnormally high, which results in only a 40 percent chance that a given month's precipitation will be determined as normal.

Table 2-4 Daily Precipitation Data from Goldendale 4.2 NNW, Washington for Two Weeks Prior To and Including the April 29 through May 5, 2020, Survey

Date	Precipitation (inches)
4/14/2020	0
4/15/2020	0
4/16/2020	Trace amount (<0.01 inch)
4/17/2020	0
4/18/2020	0
4/19/2020	0.01
4/20/2020	0
4/21/2020	0
4/22/2020	0
4/23/2020	0.04
4/24/2020	0
4/25/2020	Missing data
4/26/2020	0.01
4/27/2020	0.02
4/28/2020	0
4/29/2020	0
4/30/2020	0
5/1/2020	0
5/2/2020	0
5/3/2020	0.06
5/4/2020	0
5/5/2020	0

Note: Bold font indicates the days that field work was completed.

E & E compared precipitation data for the months prior to and including the survey dates with WETS Table precipitation thresholds to determine whether these months exhibited Abnormally Low, Normal, or Abnormally High levels of precipitation (see Table 2-5). Precipitation in January was abnormally high but was followed with four months of abnormally low rainfall leading up to the April/May survey.

Table 2-5 Precipitation Normality for the Three Months Leading Up to and Including the Survey Dates

Month	Observed[1] for Month (inches)	30-year Average (1971-2019) for Month[2] (inches)	30% Chance Less Than (inches)	30% Chance More Than (inches)	Precipitation Normality
January 2020	3.38	2.74	1.86	3.27	Abnormally High
February 2020	0.19	1.82	1.03	2.21	Abnormally Low
March 2020	0.65	1.71	1.18	2.04	Abnormally Low
April 2020	0.24	1.06	0.56	1.29	Abnormally Low
May 2020 (5/1-5/6)	0.15	0.99	0.61	1.20	Abnormally Low

Note: Field surveys occurred April 29 through May 1 and May 5, 2020.
[1] Observed values derived from Goldendale 4.2 NNW, Washington, met station.
[2] 30-year normals came from Goldendale, Washington, met station.

Utilizing the method outlined in Section 650.1903 of the NRCS Engineering Field Handbook (NRCS 1997), antecedent precipitation leading up to the April survey was less than normal. According to data from Goldendale 4.2 NNW, Washington, met station, cumulative precipitation has been below 100 percent (1971 to 2019 average) the water year, which began October 1, 2019 and ends September 30, 2020. Despite the above-normal precipitation that occurred in January, cumulative precipitation was well below normal during both the April and May survey dates (see Table 2-6).

Table 2-6 Cumulative Monthly Precipitation for the Water Year

Month	Observed[1] Cumulative Precipitation for Water Year (inches)	Percent of Average[2] Water Year Accumulation
January 2020	6.46	64.8%
February 2020	6.65	56.4%
March 2020	7.30	54.1%
April 2020	7.54	51.8%
May 2020	7.69	49.5%

Notes:
1 Observed values derived from Goldendale 4.2 NNW, Washington, met station.
2 30-year normals came from Goldendale, Washington, met station.

3 Results and Discussion

3.1 Findings

E & E delineated six wetlands and five streams within the Project Area. Wetland delineation maps (see Appendix A, Figures 3 through 7) depict the Project Area, the Survey Area, the wetland boundaries, and the locations of all streams noted during the survey. Wetlands have been delineated using both Arid West and Western Mountains Valleys and Coast Regional Supplements and categorized using the Wetland Rating System for Western Washington; data sheets and scoring forms are included in Appendix B. On-site photographs are provided in Appendix C.

3.2 Non-wetlands

The Project Area is located within grassy shrub-steppe communities that have been heavily disturbed by agricultural crops and livestock grazing. The dominant upland plant communities include: Non-native Grassy Meadows, Grassy Steppe, Ponderosa Pine-Oak Forest, and Agricultural fields. On-site upland areas total 1,093.52 acres.

Non-native Grassy Meadows occur along low-lying areas adjacent to streams. They are predominantly used for livestock grazing and predominantly include: bulbous bluegrass (*Poa bulbosa*), cheatgrass (*Bromus tectorum*), silky lupine (*Lupinus sericeus*), nineleaf biscuitroot (*Lomatium triternatum*), barestem biscuitroot (*Lomatium nudicaule*), and camas (*Camassia quamash*).

Grassy Steppe communities are generally located at higher elevations along hillslopes and steep stream terraces or within highly drained soils in low areas. They are drier than the non-native grassy meadow communities and generally consist of: thymeleaf buckwheat (*Eriogonum thymoides*), blue mountain buckwheat (*Eriogonum strictum*), *Poa bulbosa, Bromus tectorum,* and catsear (*Hypochaeris radicata*). Agricultural fields are either recently tilled or contain wheat crops. These areas were located on top of hills with irrigation running down slopes into lower vegetation communities. Active Agriculture fields are located on Sites 1, 3, and 4.

Upland verification points (UVP) and additional soil pits (SP) were placed in areas along NHD lines and in areas that appeared to be a potential wetland (see Table 3-1; see Appendix C for photos).

Table 3-1 Upland Verification Points (UVP) and Soil Pits (SP)

Point ID	Remote Sensing Indicators	Comment
SP-3	Dark area on aerial imagery on south end of Stream 1.	No wetland in this location. Low area adjacent to Stream 1.
SP-10	Dark area on aerial imagery on south end of Stream 2.	Low area on Site 1, that seemed to potentially capture water. Area is dry and did not contain wetland indicators.
SP-11	Dark area on aerial imagery in location of NHD line.	Low area on Site 1, that seemed to potentially capture water. Area is dry and did not contain wetland indicators.
SP-14	Dark area on aerial imagery along Stream 3.	Area is a wet meadow along Stream 3, but does not meet any wetland indicators.
SP-15	Dark area on aerial imagery along Stream 3.	Area is a wet meadow along Stream 3, but does not meet any wetland indicators.
SP-16	Dark area on aerial imagery along Stream 3.	Area is a wet meadow along Stream 3, but does not meet hydrology or hydric soil indicators.
UVP 1	NHD line through Site 4.	This is in an agricultural field. No stream along NHD line, does not have defined bed and bank. No datasheet taken here.
UVP 2	NHD line through Site 3.	This is in an agricultural field. No stream along NHD line, does not have defined bed and bank. No datasheet recorded here.
UVP 3	Dark area on aerial imagery on Site 4.	This is a small unplowed upland area in the middle of an agricultural field. No datasheet recorded here.
UVP 4	NHD line through Site 4.	No stream along NHD line, does not have defined bed and bank. No datasheet recorded here.
UVP 5	NHD line through Site 4.	This is in an agricultural field. No stream along NHD line, does not have defined bed and bank. No datasheet recorded here.
UVP 6	NHD line through Site 4.	This is in an agricultural field. No stream along NHD line, does not have defined bed and bank. No datasheet recorded here.

Key:
NHD = National Hydrography Dataset
SP = soil pit
UVP = upland verification pit

Soil Pit 3

SP-3 is located in a wet meadow along Stream 1. The area appears to contain similar features to Wetland A. Vegetation dominants include: *Camassia quamash,* common spikerush (*Eleocharis palustris*), and medusahead (*Taeniatherum capt-medusa*). The area meets both hydric vegetation and hydrology for wetlands. However, hydric soil indicators were not met within the wet meadow. E & E anticipates a regular water table would increase water within the streams and the overall hydrology of the site, but lack of soil indicators cannot be fully explained by drier than normal water year. Hydric soil indicators are a result of long-term inundation that are not going to remove hydric soil indicators from one dry water year. This area was deemed to be upland.

Soil Pit 10

SP-10 is located within a depression at the end of Stream 2. Aerial imagery gave this area the appearance of saturation, however, no wetland indicators were met. Dominant vegetation includes: *Eriogonum thymoides*, *Poa bulbosa*, and *Hypochaeris radicata*.

Soil Pit 11

SP-11 is located within a depression near Stream 2. Aerial imagery gave this area the appearance of saturation, however, no wetland indicators were met. Dominant vegetation includes: *Eriogonum strictum* and *Hypochaeris radicata*.

Soil Pit 15

SP-15 is located along Stream 3 within a low stream terrace. Soils were dry and do not contain any hydric soil features despite their location within the floodplain of the stream. Vegetation dominants include ponderosa pine (*Pinus ponderosa*) and elk sedge (*arex geyeri*).

Soil Pit 16

SP-16 is located along Stream 3 within a wet meadow. Water was present within the stream at the time of the survey, but soils did not contain any hydric soil features. Vegetation dominants include *Eleocharis palustris* and *Poa bulbosa*.

3.3 Wetlands

Six wetlands were delineated within the Project Area and totaled approximately 1.57 acres. All wetland features on-site were observed along NHD lines in low areas abutting streams. The on-site wetlands consist of palustrine emergent (PEM) vegetative communities. Wetlands have been evaluated using the most current Washington State Rating System for Eastern Washington. Wetland results are presented in Table 3-2. Using GIS, wetland size has been determined for areas within the Project Area. Wetlands are illustrated in Appendix A; Figures 3 through 7. Data sheets and scoring forms are included in Appendix B. On-site photographs are provided in Appendix C

Table 3-2 Project Area Wetlands

Wetland ID	Cowardian Classification	HGM Classification	Score	Jurisdictional Authority	Size within Project Area (acres)	Additional Information
Wetland A	PEM1C	Riverine	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.26	Abutting Stream 1 on Site 1; mapped by NWI as a PEM 1C.
Wetland B	PEM1F	Depressional	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.46	Depression abutting Stream 1 on Site 1; not mapped by NWI.
Wetland C	PEM2F	Depressional	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.18	Depression abutting Stream 1 and Wetland D; not mapped on NWI.
Wetland D	PEM1C	Slope	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.69	Abutting Stream 1 and Wetland C; not mapped on NWI.

Table 3-2 Project Area Wetlands

Wetland ID	Cowardian Classification	HGM Classification	Score	Jurisdictional Authority	Size within Project Area (acres)	Additional Information
Wetland E	PEM1C	Riverine	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.37	Abutting Stream 2 on Site 1; not mapped by NWI.
Wetland F	PEM1C	Riverine	Cat III	Section 404 Waters of the U.S. and Section 401 waters of the State	0.03	Abutting Stream 3 on Site 2; not mapped by NWI.
Total Wetlands					**1.57**	

Key:
HGM = hydrogeomorphic
PEM1C = Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded
PEM1F = Palustrine, Emergent, Persistent Vegetation, Semipermanently Flooded
PEM2F = Palustrine, Emergent, Nonpersistent Vegetation, Semi-permanently Flooded
NWI = National Wetland Inventory

3.3.1 Wetland Habitat

All wetlands exhibit the effects of historical and ongoing agricultural management. Historical Shrub-steppe communities and native grasslands have been removed or altered due to heavy livestock grazing. Vegetation within the wetlands is similar to the non-native grassy meadows, but includes wet species such as: *Eleocharis palustris,* meadow foxtail (*Alopecurus pratensis*), *Camassia quamash,* needleleaf pincushionplant (*Navarretia intertexta*), and field sedge (*Carex praegracilis*).

All wetlands were observed to be PEM as defined by the Cowardin classification system (Cowardin et al. 1979) and descriptions of wetland communities presented in Edinger et al. (2002). Based on field observations and the classification system presented in Cowardin et al. (1979)., the general wetland communities identified on-site were similar and identified as PEM. However, wetland communities differed due to persistent/nonpersistent vegetation and how long each wetland is inundated with water. A detailed description of vegetation associated with each community type, as observed during field surveys, is provided below. The descriptions are listed under the Cowardin classification used for that wetland type during surveys.

Palustrine Emergent Wetland (PEM)

Wetlands classified under the Cowardin system as PEM wetlands are dominated by herbaceous vegetation with little or no woody plant material present. These are further described using the classification system presented in Edinger containing persistent or nonpersistent wetland vegetation and modified according to each wetland's water regime.

Wetland A (SP-1 and SP-2)

A hummocky wetland abutting the south end of Stream 1 on Site 1. This wetland was identified by NWI as a palustrine emergent wetland, persistent vegetation,

seasonally flooded (PEM1C). It is located in a wet meadow along Stream 1 with *Carex pragracilis* and *Eleocharis palustris* as dominants. Site 1 is heavily influenced by cattle grazing.

Wetland B (SP-4 and SP-5)

Wetland B is a small depression that connects to Stream 1 on Site 1. The wetland may be man-made because the upland surrounding the wetland is approximately 10 feet taller than the wetland, creating a "bowl." There is an outlet under the road on the eastern end of the wetland; however, the field team was unable to identify a drain tile or culvert because it was under water.

This wetland was not identified by NWI. Dominant plant species include *Eleocharis palustris* and *Navarettia intertexta*. Biotic crust covers 15 percent of the wetland surface while the remaining 45 percent is bare ground. Compacted soil was found at 8 inches. E & E has classified this wetland as a Palustrine, Emergent, Persistent Vegetation, Semipermanently Flooded (PEM1F).

Wetland C (SP-6 and SP-7)

Wetland C is a depression that abuts Stream 1. Water collects from agricultural fields uphill and ponds in this depression. The water is collected and diverted north along Stream 1 into Wetland D. Additionally, if enough water is collected, water can overtop the bank and flow south along Stream 1.

This wetland was not identified by NWI. Dominant plant species includes *Navarettia intertexta*. Biotic crust accounts for 15 percent of the ground cover. E & E classified this wetland as a Palustrine, Emergent, Nonpersistent Vegetation, Semipermanently Flooded (PEM2F).

Wetland D (SP-8 and SP-9)

Wetland D is a gently sloped meadow that abuts Stream 1. Water overflows from Wetland C into Stream 1 and flows north. Wetland D directly abuts Wetland C, but the vegetation community drastically changes to meadow wetland species and includes *Alopecurus pratensis* and reed canary grass (*Phalaris arundinacea*) as wetland dominant species. The wetland gently slopes north (10 percent) along the stream.

This wetland was not identified by the NWI. The upland plot contained hydrophytic vegetation, and the wetland boundary could only be confirmed with the lack of hydric soils. This wetland was identified by NWI as a PEM1C.

Wetland E (SP-12 and SP-13)

Wetland E is a wet meadow abutting Stream 2. Water flows south along Stream 1 and seasonally floods the adjacent meadow. Both wetland and upland pits are located along the stream banks. The dominant hydrophytic vegetation subtly shift from *Camassia quamash* and Yorkshire fog (*Holcus lanatus*) to *Poa bulbosa* and blue bunchgrass (*Festuca idahoensis*). The wetland boundary was very subtle and

could only be confirmed with the lack of hydric soils. This wetland was identified by the NWI as a PEM1C.

Wetland F (SP-17 and SP-18)

Wetland F is a depressed wet meadow identified along the south end of Stream 3, on Site 2. Hydrophytic vegetation includes *Eleocharis palustris* and *Holus lanatus*. The vegetation community was moderately grazed by livestock on-site. This wetland was not identified by the NWI. This wetland was identified by NWI as a PEM1C.

3.4 Other Waters

E & E identified five streams on-site: three intermittent and two ephemeral streams. Biologists used aerial photography and NHD lines to identify where streams may be located throughout the Project Area. Streams were verified by on-site delineation and identification of ordinary high water marks (see Table 3-3 Project Area Streams). Onsite streams flow south, draining into Blockhouse Creek and Little Klickitat Creek.

Stream 1 is intermittent and highly meandering through Sites 1 and 2. The northern section of Stream 1, within Site 2, is mainly dominated by shrub-steppe vegetation community. As the stream moves south and into Site 1, the vegetation community gradually changes to a non-native grassy meadow. No water was within the stream channel at the time of the survey.

Stream 2 is an intermittent stream on Site 1. The northern section of the stream was wet at the time of observation most likely due to groundwater. The vegetation community consists of non-native grasses and *Camassia quamash*. The stream was dry south of Wetland E and the vegetation community shifted to a shrub-steppe. The upland areas surrounding Stream 2 were drier and contained a more developed shrub-steppe community compared to the eastern half of Site 1. The shrub-steppe community contained *Eriogonum thymoides* and *Eriogonum strictum*.

Stream 3 is an ephemeral stream on Site 1. The stream seems to convey surface water flow into a shallow stream, but quickly drains downward into the groundwater. The surrounding shrub-steppe community includes *Eriogonum thymoides* and *Eriogonum strictum*.

Stream 4 is an intermittent stream on Site 2. The headwaters begin in the northern half of Site 2 with *Pinus ponderosa*, *Quercus garryana*, and *Camassia quamash* vegetation community. The northern section is steep, approximately 20 percent slope, and contains some groundwater protrusions that create shallow pools of water. As the stream moves south, it becomes drier and the vegetation changes into a dry shrub-steppe, with no water within the stream. The stream terminates at Wetland F.

Table 3-3 Project Area Streams

Stream ID	Type	HGM Classification	Average Bankfull Width (feet)	Average Depth at Time of Survey	Jurisdictional Authority	Length in Project Area (linear feet)	Area Within Project Area (acres)
Stream 1	Intermittent	R4SB4	1	1	Section 404 Waters of the U.S. and Section 401 waters of the State	9,653.90	
Stream 2	Intermittent	R4SB4	1	1.5	Section 404 Waters of the U.S. and Section 401 waters of the State	5,029.53	
Stream 3	Intermittent	R5EM	2	1.5	Section 404 Waters of the U.S. and Section 401 waters of the State	4,803.44	
Stream 4	Intermittent	R4SB4	2	1.5	Section 404 Waters of the U.S. and Section 401 waters of the State	481.2	
Stream 5	Ephemeral	R5EM	1	0.5	Section 404 Waters of the U.S. and Section 401 waters of the State	152.19	
Total Stream						**20,120.26**	**0.58**

Note: Photos of each stream are provided in Appendix C.
Key:
HGM = hydrogeomorphic

Stream 5 is an ephemeral stream, on Site 4. The surrounding vegetation community consists of a Ponderosa Pine forest. Surface water flows into this stream and runs south off-site. No water was observed within the stream at the time of the survey.

3.5 Deviation from Local Wetland Inventory or National Wetland Inventory

E & E documented conditions in all NWI-mapped waters. See Table 3-1 for detailed information within these areas. In general, the NWI, NHD, and soil survey maps indicated the presence of fewer wetlands and waters than were observed in the field. Most wetlands delineated had not been not previously inventoried by the NWI.

The NWI identified two wetlands within the Project Area. Wetland A is identified on the NWI. Wetland A is located on Site 1 abutting the south end of Stream 1 and totals approximately 0.26 acres. The second NWI wetland was identified on Site 2 as a palustrine, unconsolidated bottom, semi-permanent flooded-tidal, excavated wetland (PUBFx). The location of the NWI was on a 25 percent slope approximately 15 feet above Stream 4. The vegetation dominants included: *Pinus ponderosa,* Oregon white oak (*Quercus garryana*), and *Carex geyeri*. No wetland was identified within this NWI.

The NHD identified a stream in the southeastern most area of Site 1. A bed and bank was not observed at this location. No stream was identified at the NHD line. See Appendix E for determination memo and DOE concurrence.

4 Conclusion

Six wetlands were identified within the Project Area and account for approximately 1.57 acres. Five streams cross the Project Area and account for an additional 20,120.26 linear feet of waterway within the Project Area. In total, 1,093.52 acres of upland habitat exist within the Project Area. The wetlands and other waters identified within the Project Area are under the jurisdiction of WDOE and USACE.

This report has been prepared in accordance with the current Navigable Waters Protection Rule as of June 19, 2020. If this rule is superseded at the time of verification, the findings in this report remain relevant for the purpose of seeking a Preliminary Jurisdictional Determination.

Placement of fill within wetlands and other waters may require permit authorization from the USACE per Section 404 of the Clean Water Act (33 United States Code §1251 et seq.). If impacts to on-site wetlands or other waters of the United States is proposed, these activities may be authorized under the USACE 2017 NWP program. As a condition of the NWP program, concurrence with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act is required. If wetlands and other waters of the United States are avoided, USACE authorization is not required.

Activities altering wetlands or other waters of the United States may require permit authorization from the WDOE per Section 401 of the Clean Water Act (Revised Code of Washington 90.48).

The WDFW requires issuance of a Hydraulic Project Approval (HPA) prior to any activities that may directly or indirectly affect streams or associated wetlands. The WDFW should be contacted prior to completing on-site work to determine if an HPA is required.

4.1 Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of the authors' knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters of the United States and used at your own risk unless it has been reviewed and approved in writing by the WDOE or USACE.

5 References

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A Figures

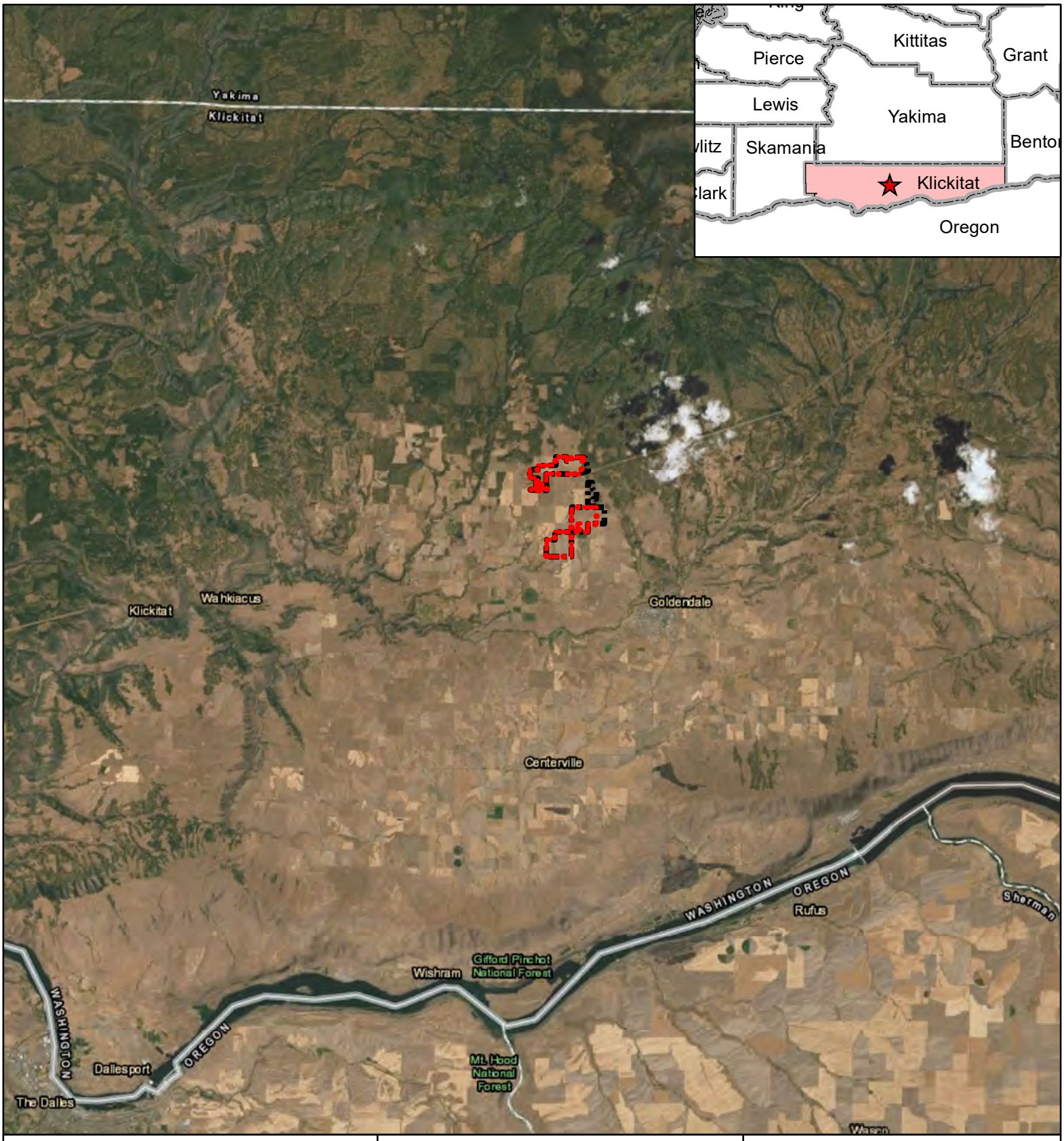

Figure 1:
Project Location

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area

0 2.5 5 Kilometers

N

0 1.25 2.5 5 Miles 1:250,000

Background Credit: ESRI
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

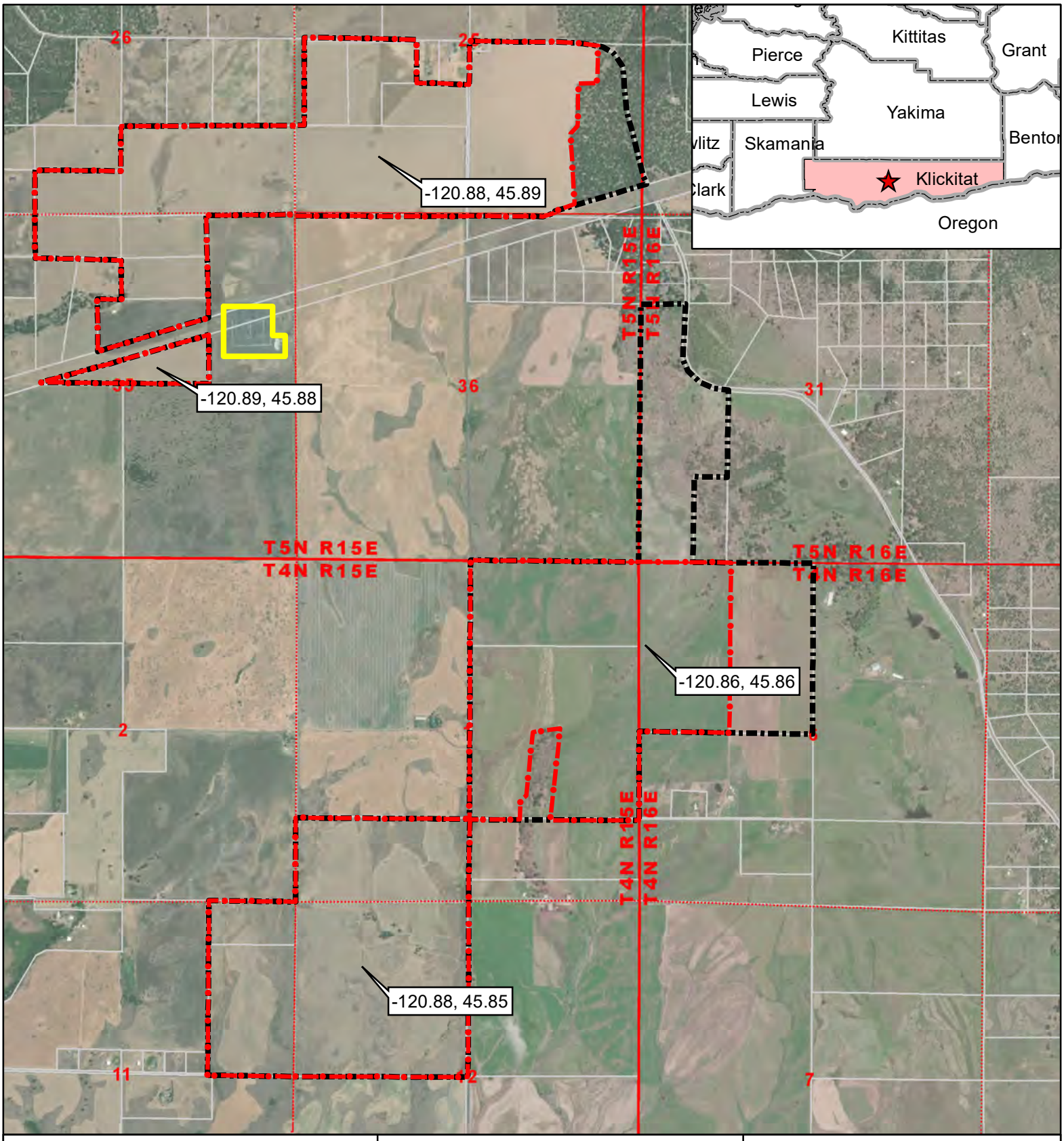

Figure 2:
Site Boundary

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area
BPA Substation
Property Parcels
Township
Section

0 250 500 Meters

0 0.25 0.5 Miles

N

1:24,000

Background Credit: ESRI
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

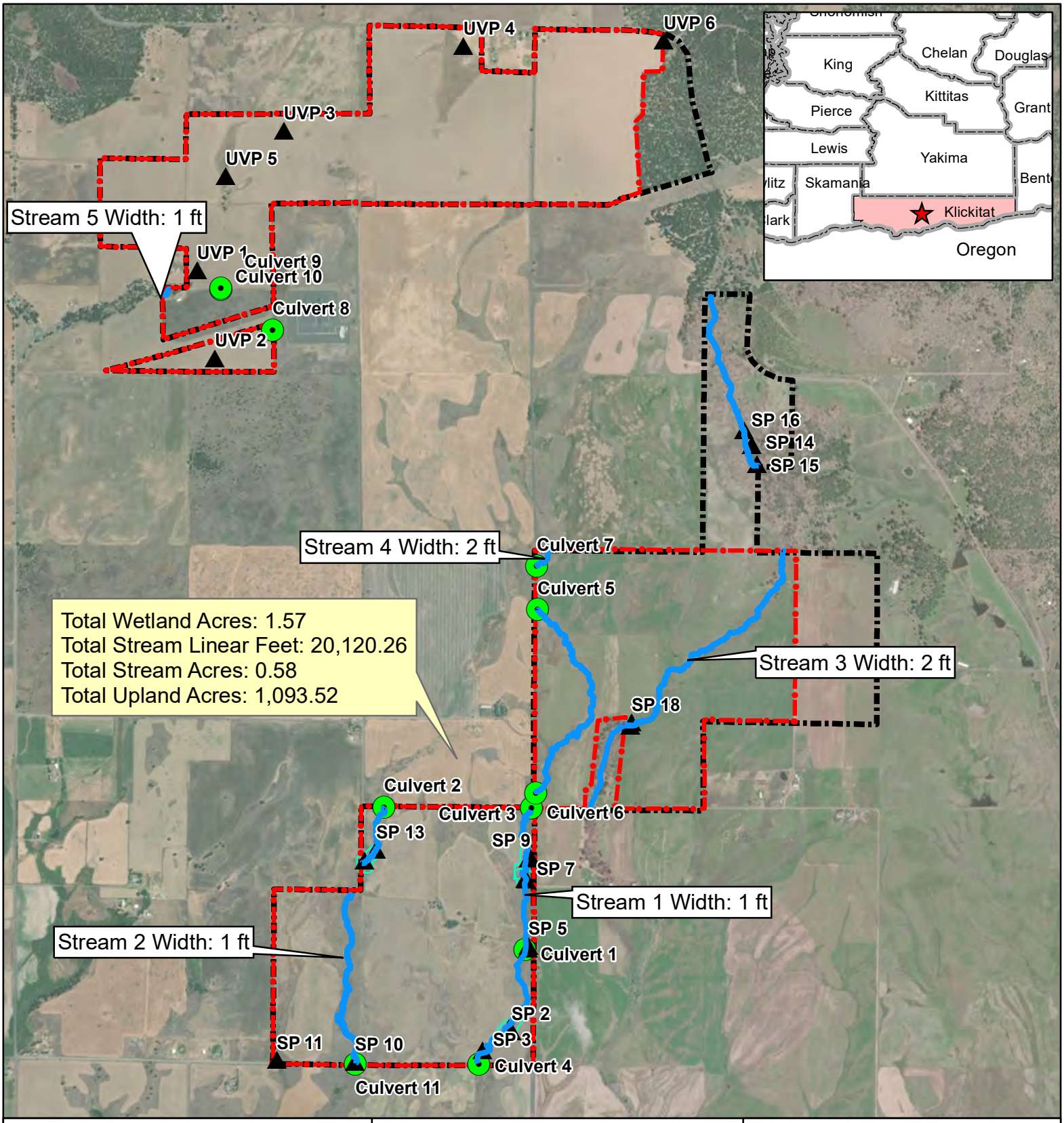

Figure 3: Wetlands and Other Waters

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

- Project Area
- Survey Area
- Wetlands
- Wetlands 75 ft Buffer
- Streams
- Culvert
- Upland Sampling Locations

0 250 500 Meters

0 0.25 0.5 Miles

N

1:24,000

Background Credit: ESRI
Produced by: Rebecca Reints
Data Collected on: April 29 – May 1 and May 5, 2020 by Bridget Wojtala and Rachel Locke
Revised November 18, 2020

Corps Reference No. NWS-2020-712

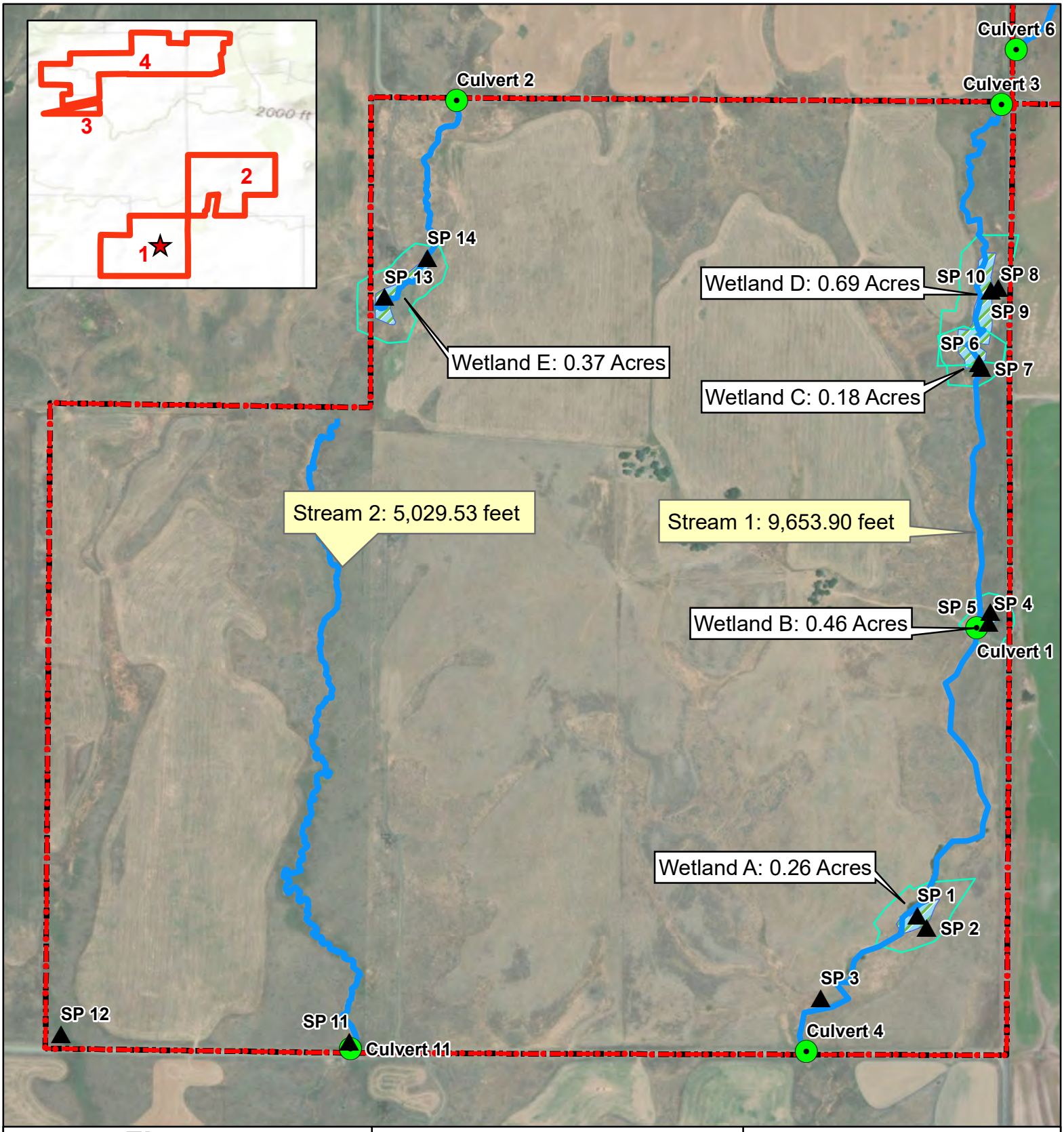

Figure 4: Wetlands and Other Waters

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

- Project Area
- Survey Area
- Wetlands
- Wetlands 75 ft Buffer
- Streams
- Upland Sampling Locations
- Culvert

0 100 200 Meters

0 0.05 0.1 Miles

N

1:6,500

Background Credit: ESRI
Produced by: Rebecca Reints
Data Collected on: April 29 – May 1 and May 5, 2020 by Bridget Wojtala and Rachel Locke
Revised November 18, 2020

Corps Reference No. NWS-2020-712

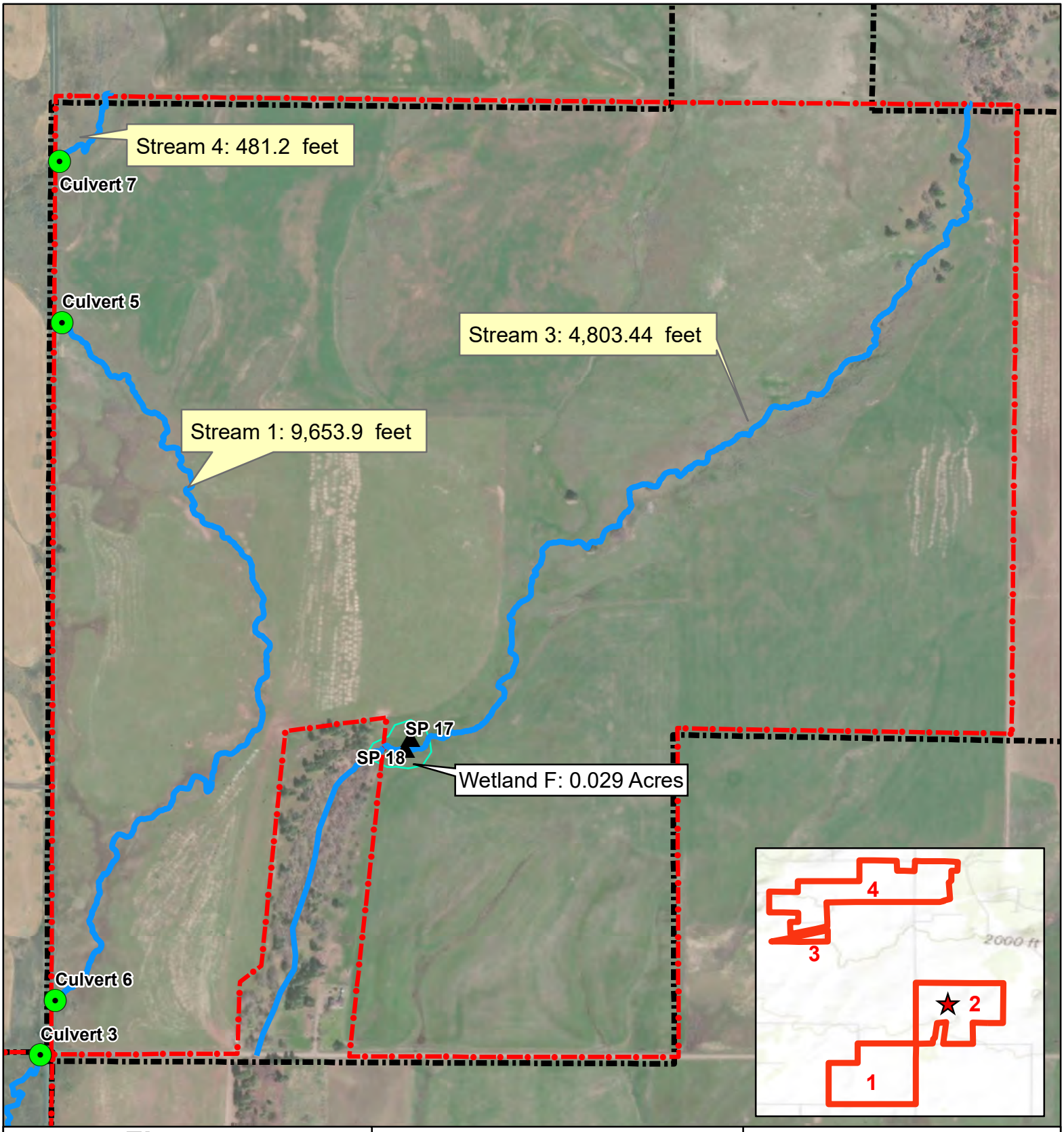

Figure 5: Wetlands and Other Waters

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area
Streams
Upland Sampling Locations
Culvert

0 100 200 Meters
0 0.05 0.1 Miles
N
1:6,500

Background Credit: ESRI
Produced by: Rebecca Reints
Data Collected on: April 29 – May 1 and May 5, 2020 by Bridget Wojtala and Rachel Locke
Revised November 18, 2020

Corps Reference No. NWS-2020-712

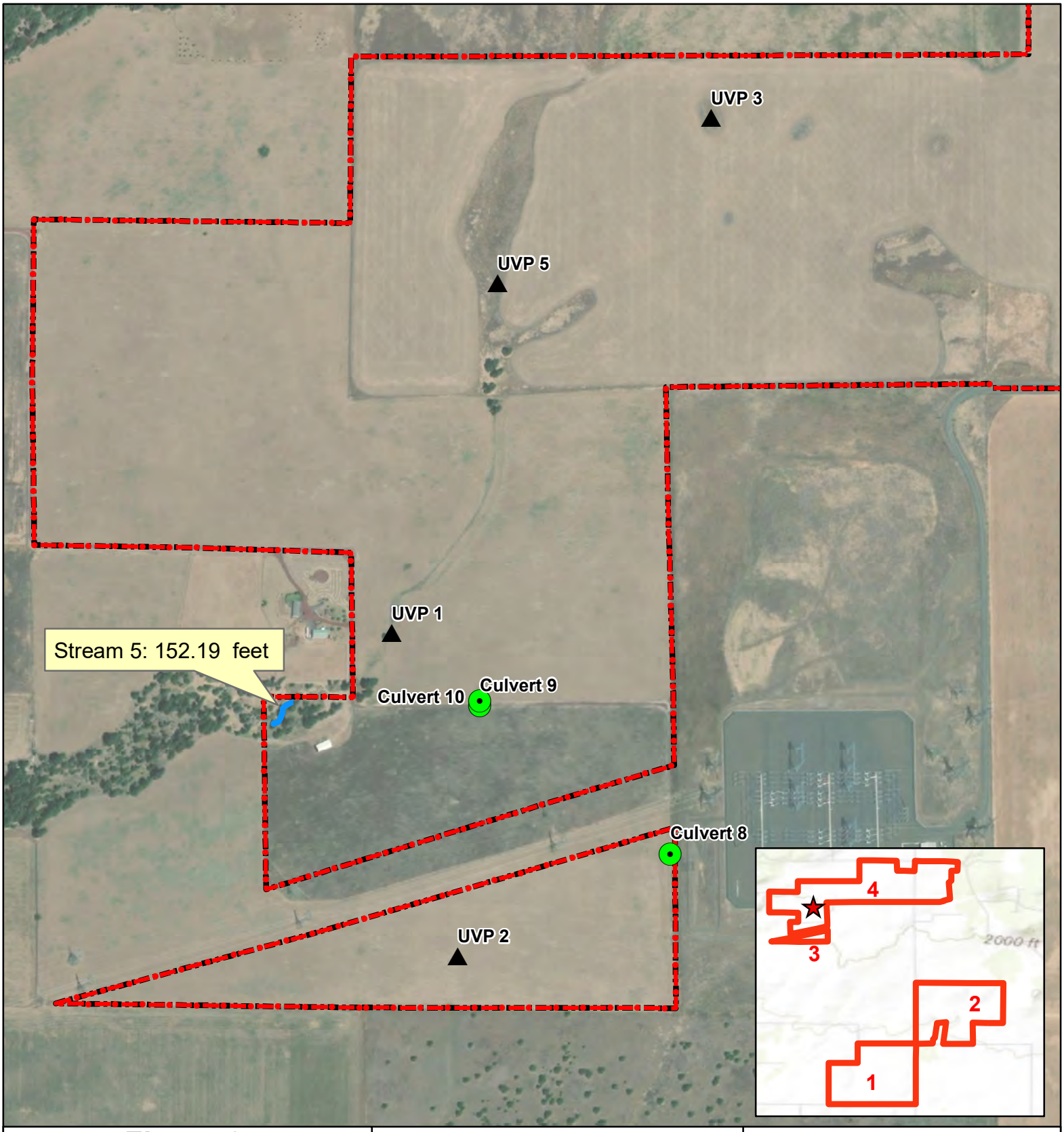

Figure 6: Wetlands and Other Waters

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area
Streams
Upland Sampling Locations
Culvert

0 100 200 Meters
0 0.05 0.1 Miles
1:6,500
N

Background Credit: ESRI
Produced by: Rebecca Reints
Data Collected on: April 29 – May 1 and May 5, 2020 by Bridget Wojtala and Rachel Locke
Revised November 18, 2020

Corps Reference No. NWS-2020-712

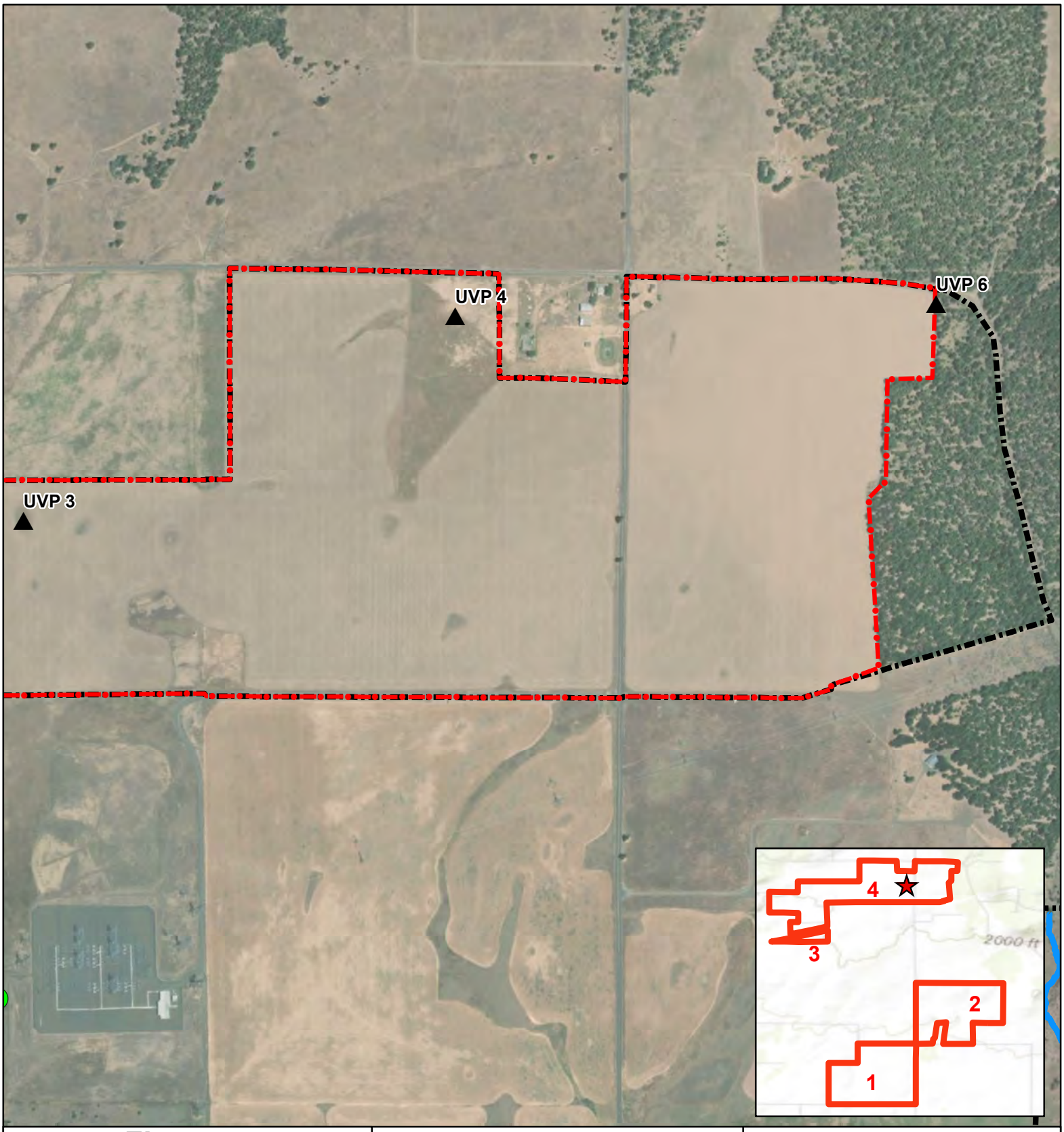

Figure 7: Wetlands and Other Waters

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area
Streams
Upland Sampling Locations
Culvert

0 100 200 Meters
0 0.05 0.1 Miles
N
1:10,000

Background Credit: ESRI
Produced by: Rebecca Reints
Data Collected on: April 29 – May 1 and May 5, 2020 by Bridget Wojtala and Rachel Locke
Revised November 18, 2020

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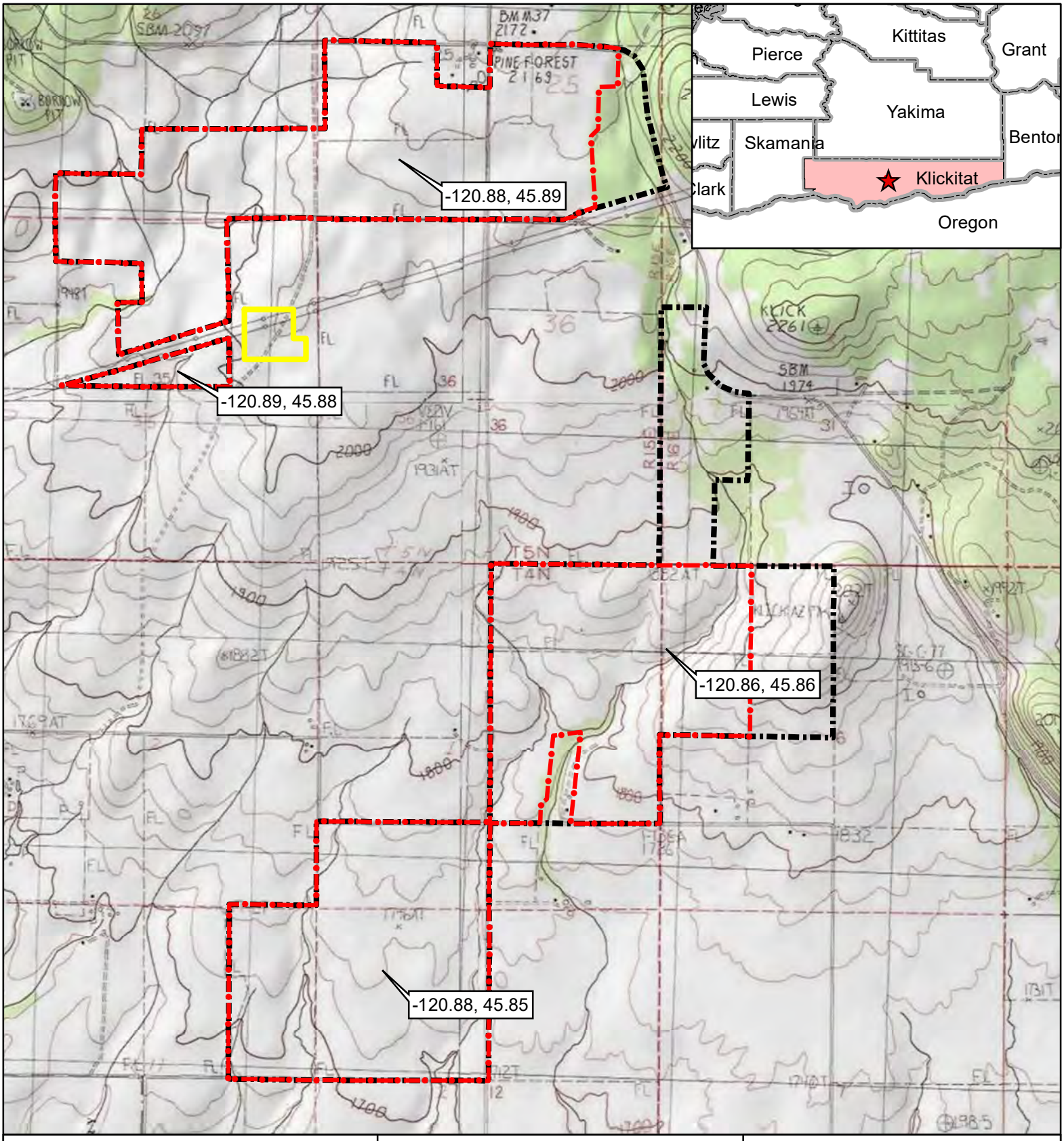


Figure 8:
USGS Topography
Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

Project Area
Survey Area
BPA Substation

0 250 500 Meters
0 0.25 0.5 Miles
N
1:24,000

Background Credit: USGS
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

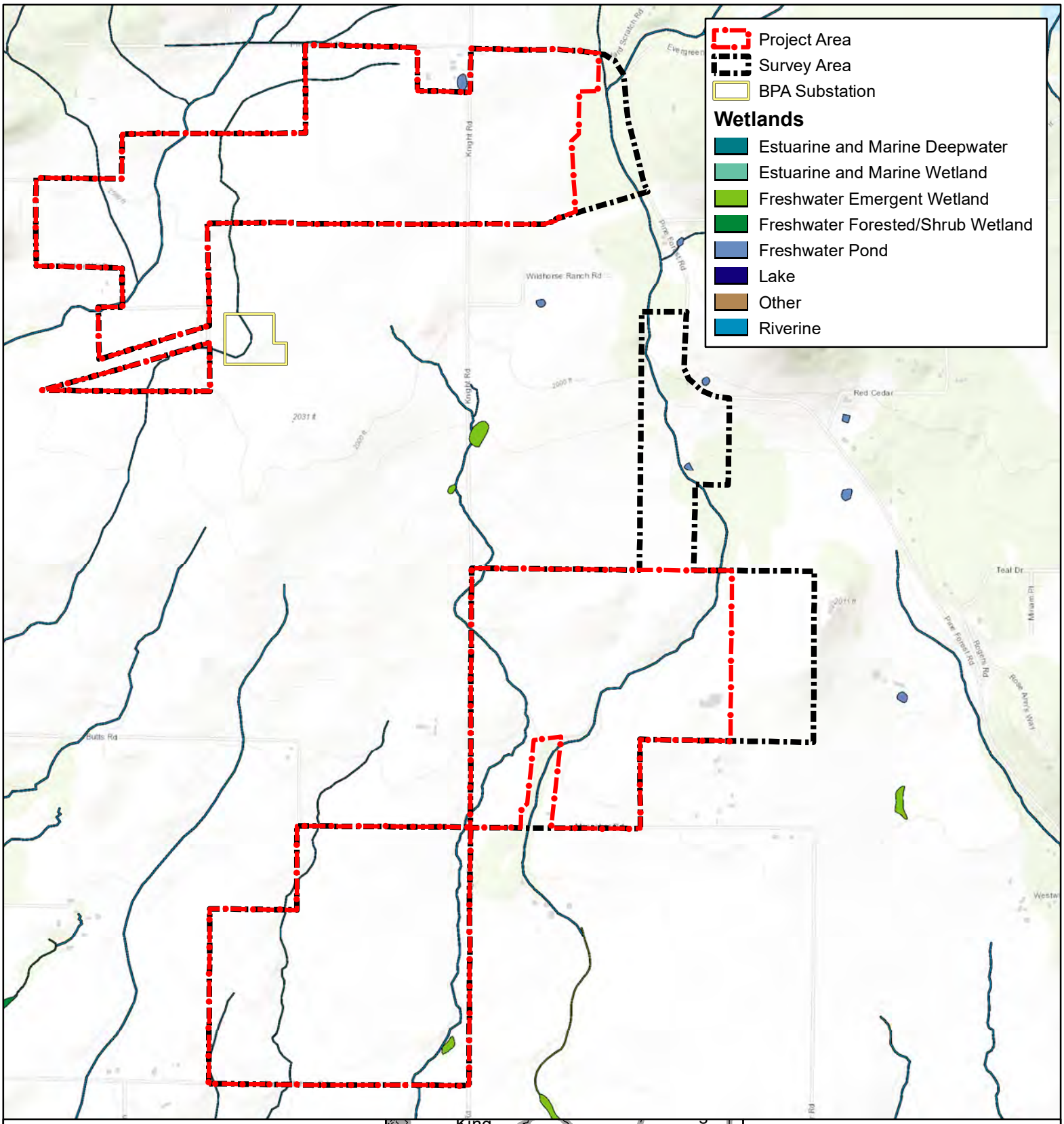


Figure 9: National Wetlands Inventory

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

0 250 500 Meters

0 0.25 0.5 Miles

N

1:24,000

Background Credit: ESRI
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

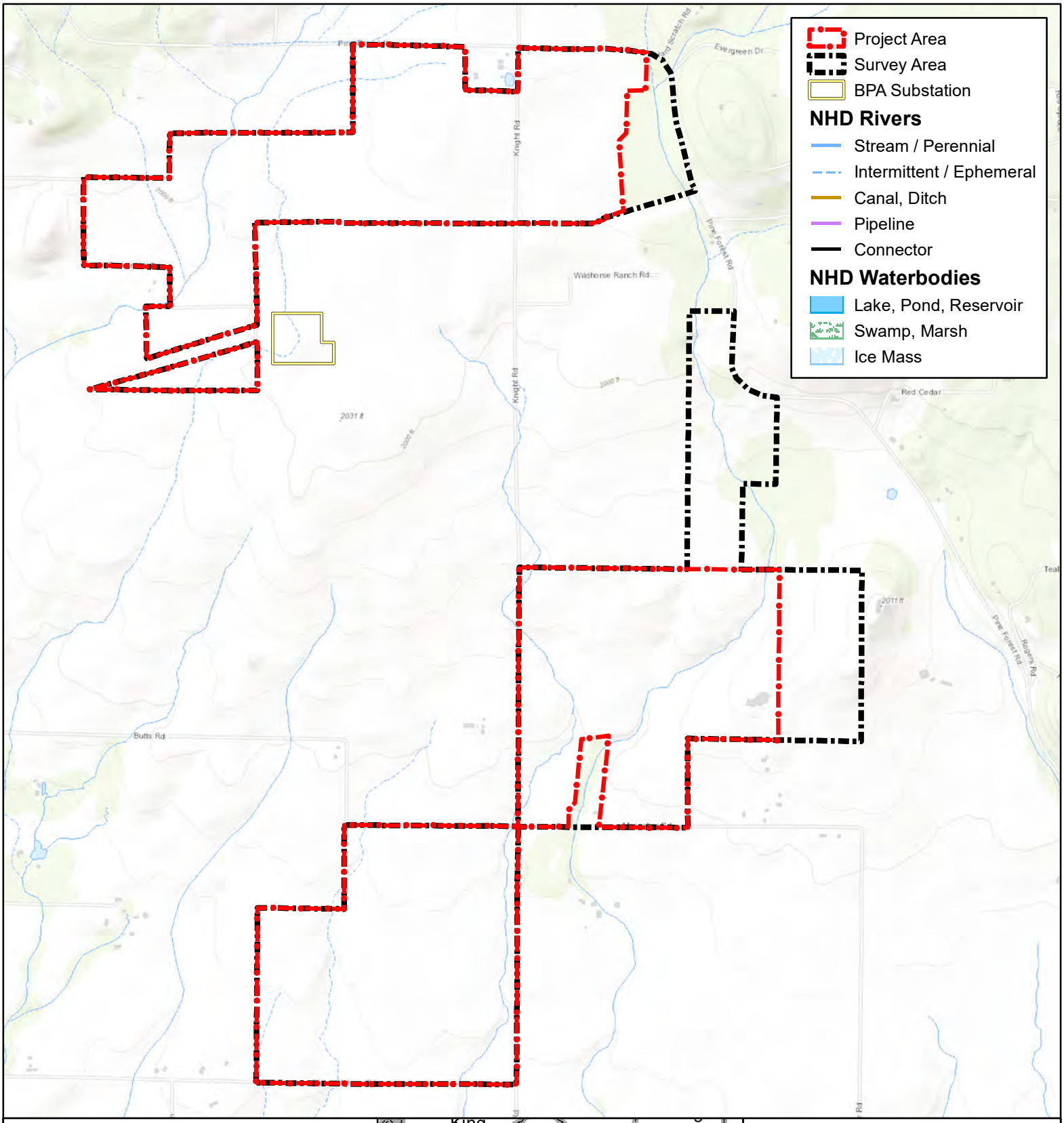


Figure 10: National Hydrography Data

Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

0 250 500 Meters

0 0.25 0.5 Miles

N

1:24,000

Background Credit: ESRI
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

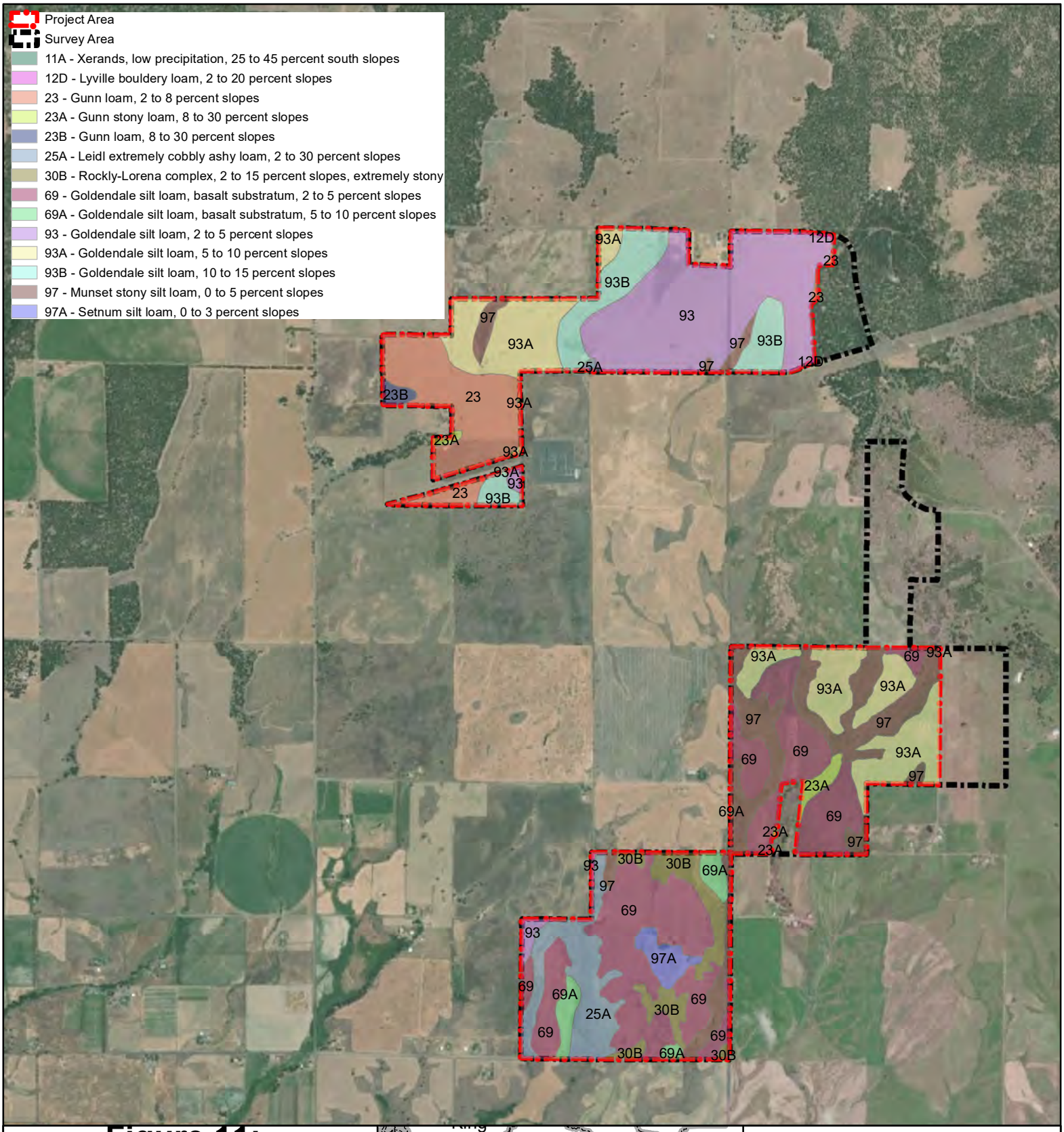


Figure 11:

USGS Soils
Carriger Solar Project

Cypress Creek Renewables, LLC
Carriger Solar, LLC

0 250 500 Meters

0 0.25 0.5 Miles

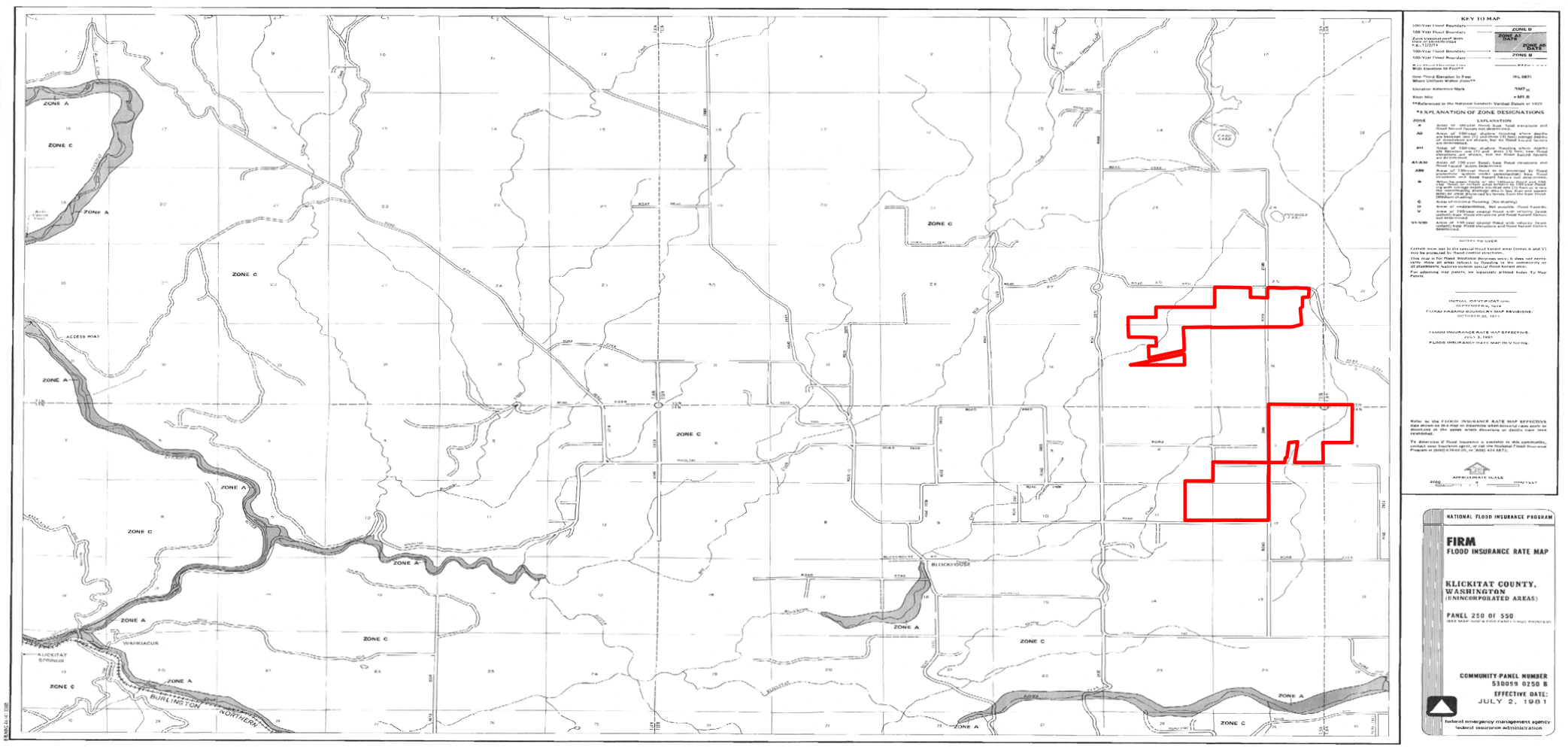
1:30,000

N

Background Credit: ESRI
Produced by: Rebecca Reints
Revised November 18, 2020

Corps Reference No. NWS-2020-712

Figure 12: FEMA



B Wetland Data Forms and Scoring Sheets

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 - Munset stony silt loam, 0 to 5% slopes NWI classification: PEM 1C
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: Verification of NWI wetland. It is unseasonably dry this year - see WETs table for additional data.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
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. Carex praegracilis	50	Y	FACW
2. Eleocharis palustris	50	Y	OBL
3. Taraxacum officionale	1	N	FACU
4. Poa bulbosa	1	N	FACU
5.			
6.			
7.			
8.			
	102 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust 0

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	50	x 1 =	50
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	102 (A)		158 (B)

Prevalence Index = B/A = 1.54

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 3/2	100					loam	many roots
8-13	10YR 4/1	95	2.5YR 3/4	5	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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): ___

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 R15E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): flat Slope (%): 15

Subregion (LRR): LRR B 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Upland pit is approximately 10 feet above wetland pit. It is unseasonably dry - see WETS table for additional info.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
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. Achillea millefolium	15	~~N~~ Y	FACU
2. Poa bulbosa	20	~~N~~ Y	FACU
3. Erodium cicutarium	30	Y	NL
4. Lomatium nudicaule	25	Y	UPL
5. Bromus tectorum	15	N	NL
6.			
7.			
8.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust 0

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 (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	35	x 4 =	140
UPL species	~~25~~ 70	x 5 =	~~350~~ 125
Column Totals:	~~105~~ 60 (A)		~~490~~ 265 (B)

Prevalence Index = B/A = ~~4.67~~ 4.41

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-13	10YR 4/3	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

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. Lolke, 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 ✓ No ~~✓~~
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ✓ No ~~✓~~
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Upland verification point in low area adjacent to NHD line. WETS tables indicate unseasonably dry water year

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. Camassia quamash	15	Y	FACW
2. Poa bulbosa	5	N	FACU
3. Eleocharis palustris	35	Y	OBL
4. Taeniatherum capt-medusae	45	Y	NL
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
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: 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	35	x 1 =	35
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	55 (A)		85 (B)

Prevalence Index = B/A = 85/55 = 1.54

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ~~✓~~

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	99	7.5YR 4/6	1	C	M	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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 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 R15E

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 ✓ No ____

Hydric Soil Present? Yes ✓ No ____

Wetland Hydrology Present? Yes ✓ No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Small depression where drainage connects to NHD line. It is unseasonably dry - see WETs table for additional 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. Eleocharis palustris	40	Y	OBL
2. Navarretia intertexta	2	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	42 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 45 % 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	40	x 1 =	40
FACW species	2	x 2 =	4
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	42 (A)		44 (B)

Prevalence Index = B/A = 1.04

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	80	7.5YR 4/6	20	C	M	silt loam	
4-8	7.5YR 3/1	75	5YR 3/4	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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 B

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. Hicks, B. Wojtala Section, Township, Range: S 12 T4N R15E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Flat Slope (%): 15

Subregion (LRR): LRR B Lat: 45.8513 Long: -120.8746 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 ✓	No ~~✓~~	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Area looks as if it was man-made. 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. Bromus tectorum	60	Y	NL
2. Lomatium triternatum	5	Y	UPL
3. Lupinus ~~sericeus~~ sericeus	5	N	NL
4. Epilobium hirsutum	30	Y	FACW
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 1 % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	~~10~~ 5	x 5 =	~~50~~ 25
Column Totals:	~~40~~ 35	(A)	~~140~~ 85 (B)

Prevalence Index = B/A = ~~3.5~~ 2.42

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ~~✓~~

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

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. Lowe, B. Wojtala Section, Township, Range: S1 T4N R15E

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 - Rockly-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 ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	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[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	85	5YR 4/6	15	C	M	silty loam	
8-12	7.5YR 2.5/1	60	~~7.5YR 4/4~~	~~40~~			loam	gravelly
8-12	7.5YR 4/4	40					loam	gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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: Klickitat 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 R15E
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: 301B - Rockly-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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Upland pit approximately 10 feet above wetland pit. It is unseasonably dry this year. See WETS table for additional data.

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: 15 feet)			
1. Lupinus sericeus	20	Y	NL
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Lomatium triternatum	1	N	UPL
2. Achillea millefolium	5	N	FACU
3. Bromus tectorum	90	Y	NL
4. Camassia quamash	1	N	FACW
5. Erodium cicutarium	15	N	NL
6.			
7.			
8.			
	112 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust 0

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 1	x 2 = 2
FAC species 0	x 3 = 0
FACU species 5	x 4 = 20
UPL species 0	x 5 = 0
Column Totals: 6 (A)	22 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10 YR 3/3	100					loam	gravels & boulders

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

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. Wojtalo Section, Township, Range: S1T4NR15E
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: 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 ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Meadow abuts NHD line. It is ~~seas~~ unseasonably dry this year - see WETs table for more info.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
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. Camassia quamash	20	N	FACW
2. Potentilla sp.	1	N	-
3. Alopecurus pratensis	40	Y	FACW
4. Phalaris arundinacea	90	Y	FACW
5.			
6.			
7.			
8.			
151 = Total Cover			
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

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		x 1 =	
FACW species	150	x 2 =	300
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	150 (A)		300 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	85	7.5YR 4/6	15	C	M	loam	
6-13	10YR 3/1	99	7.5YR 4/6	1	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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): _____

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-9

Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S1 T4N R15E

Landform (hillslope, terrace, etc.): hillslope 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 ✓	No ~~✓~~	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Upland pit is approximately 5 feet above wetland pit. It is unseasonably dry - see WETs table for more info.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Crataegus douglasii	10	Y	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. Crataegus douglasii	20	Y	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 feet)			
1. Poa bulbosa	1	N	FACU
2. Wyethia amplexicaulis	50	Y	FAC
3. Taraxacum officinale	15	N	FACU
4. Alopecurus pratensis	5	N	FACW
5. Camassia quamash	1	N	FACW
6. Bromus tectorum	30	Y	NL
7. Phalaris arundinacea	30	Y	FACW
8.			
	132	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
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: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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	36	x 2 =	72
FAC species	80	x 3 =	240
FACU species	16	x 4 =	64
UPL species	0	x 5 =	0
Column Totals:	132 (A)		376 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					loam	
5-12	10YR 3/1	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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): _____

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: S11 T4N 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 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. Eriogonum thymoides	5	Y	NL
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Poa bulbosa	5	Y	FACU
2. Hypochaeris radicata	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 90 % 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: 2 (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

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-13	10YR 4/3	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

No wetland hydrology indicators met.

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-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: 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

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
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. Eriogonum strictum	95	Y	NL
2.			
3.			
4.			
5.			
	95 = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Hypochaeris radicata	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

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

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: No hydrophytic vegetation indicators met.

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/3	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

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: S1T4N R15E

Landform (hillslope, terrace, etc.): stream bank Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRRC 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 ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: Wet meadow adjacent to NHD line, It is unseasonably dry – see WETS tables 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. Camassia quamash	35	Y	FACW
2. Wyethia amplexicaulis	20	N	FAC
3. Holcus lanatus	55	Y	FAC
4.			
5.			
6.			
7.			
8.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust 0

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	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		295 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 2.5/2	80	2.5YR 4/6	20	C	M	silt loam	many roots
7-10	7.5YR 2.5/2	99	2.5YR 2.5/4	1	C	M	silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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:

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): Mikelle B. Wojtala Section, Township, Range: S1 T4N R15E

Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): flat Slope (%): 5

Subregion (LRR): LRR C Lat: 45.8553 Long: -120.8839 Datum: NAD1983

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 ___	No ✓	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: Meadow adjacent to N+D line. Both soil pits are within bare streambank. It is unseasonably dry - see WETS table.

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. Camassia quamash	20	N	FACW
2. Poa bulbosa	40	Y	FACU
3. Lomatium triternatum	10	N	UPL
4. Festuca idahoensis	40	Y	FACU
5. Geranium carolinianum	10	N	NL
6.			
7.			
8.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
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: 2 (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	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	110 (A)		410 (B)

Prevalence Index = B/A = 3.72

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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: Soil is dry

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:

ID: MP:

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 NWI 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 ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Soil pit within NWI. Site is sleeply sloped, and is 15 feet above NHD stream. It is unseasonably dry this year - see WETS table for additional info.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus Ponderosa	10	Y	FACU
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. Quercus garryana	30	Y	FACU
2. Eriogonum strictum	5	N	NL
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Carex geyeri	75	Y	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 1

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 (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 0	x 5 =	0
Column Totals: 40 (A)		160 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: 20% duff layer of oak leaves

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10 YR 2/2	100					loam	many rocks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]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: Large boulders throughout plot 20%

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

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: No wetland hydrology

ID: MP:

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: WA Sampling Point: SP-15
Investigator(s): R. Locke, B. Wojtala Section, Township, Range: S31 T5N R16E
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% 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Soil pit along stream terrace of NHD stream; It is unseasonably dry during this year – see WETs table for additional data.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus ponderosa	30	Y	FACU
2.			
3.			
4.			
	30 = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. Carex geyeri	85	Y	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5

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	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	30 (A)		120 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 3/2	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

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 dry

ID: MP:

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. Rocke, B. Wojtala Section, Township, Range: S 31 T5N R16E

Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): LRR E Lat: 45.8731 Long: -120.8618 Datum: NAD 1983

Soil Map Unit Name: 120 Lyvile loulding loam, 2 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 ✓	No	
Hydric Soil Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Wetland Hydrology Present?	Yes ____	No ✓	

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
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. Camassia quamash	10	N	FACW
2. Poa bulbosa	40	Y	FACU
3. Eleocharis palustris	30	Y	OBL
4. Lomatium nudicale	5	N	UPL
5. Bromus tectorum	1	N	NL
6. Geranium carolinianum	25	Y	NL
7.			
8.			
9.			
10.			
11.			
	111 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 30	x 1 =	30
FACW species 10	x 2 =	20
FAC species 0	x 3 =	0
FACU species 40	x 4 =	160
UPL species 5	x 5 =	25
Column Totals: 95	(A)	235 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ 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) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

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)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

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 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, Wojtala Section, Township, Range: S1T4NR15E
Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): Concave Slope (%): 10
Subregion (LRR): LRR B Lat: 45.86066 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 ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Wet meadow adjacent to stream, It is unseasonably dry this year - see WETs table for additional info.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
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. Eleocharis palustris	60	Y	OBL
2. Holcus lanatus	40	Y	FAC
3. Festuca idahoensis	10	N	FACU
4. Rumex crispus	10	N	FAC
5.			
6.			
7.			
8.			
	120 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 % 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	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	~~50~~	x 3 =	~~120~~ 150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	120 (A)		250 (B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

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 Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5 YR 3/1	75	5YR 3/4	25	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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 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-18
Investigator(s): K. Beebe, B. Wojtala Section, Township, Range: S1T4NR15E
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: 23A - Gvan 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 ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Upland soil pit is 10 feet above wetland soil pit. 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
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ~~5 feet~~)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Holcus lanatus	30	Y	FAC
2. Erodium cicutarium	30	Y	NL
3. Lomatium nudicaule	20	Y	UPL
4. Achillea millefolium	5	N	FACU
5.			
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15 % 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: ~~3~~ 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 ~~33%~~ % (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	5	x 4 =	20
UPL species	20 ~~50~~	x 5 =	~~250~~ 100
Column Totals:	~~85~~ 55	(A)	~~340~~ 210 (B)

Prevalence Index = B/A = ~~6.18~~ 3.81

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 3/4	100					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]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)

- ___ 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 dry

Wetland name or number Wetland A

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: 4/29/20

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 ____ (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	
	Circle the appropriate ratings			
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	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 *Circle the appropriate category*
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	✓

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 *(can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to another figure)*	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 *(can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 Wetland A

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

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 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	
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area — points = 5 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. 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 > ½ total area of wetland — points = 3 Area seasonally ponded is ¼ - ½ total area of wetland — points = 1 Area seasonally ponded is < ¼ total area of wetland — points = 0	
Total for D 1 — 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 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	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 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	
Total for D 2 — Add the points in the boxes above	

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	
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	
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	
Total for D 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_____

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 — 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 unconstricted 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 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. 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	
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

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
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 > $^1/_3$ 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	1
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes):		
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	
Forest, shrub, and ungrazed herbaceous < $^1/_3$ area of wetland	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 ✓ 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	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
Total for R 2	Add the points in the boxes above	2

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	1
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
Total for R 3	Add the points in the boxes above	3

Rating of Value If score is: ✓ 2-4 = H ___ 1 = M ___ 0 = L *Record the rating on the first page*

Wetland name or number_____

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
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).* 15 ft 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 15/2 ft = 7.5	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 > 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	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*

Wetland name or number_____

LAKE FRINGE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality.		Points (only 1 score per box)
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. *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.*		
Cover of herbaceous plants is > 90% of the vegetated area	points = 6	
Cover of herbaceous plants is > $^{2}/_{3}$ of the vegetated area	points = 4	
Cover of herbaceous plants is > $^{1}/_{3}$ of the vegetated area	points = 3	
Other plants that are not aquatic bed > $^{2}/_{3}$ wetland	points = 3	
Other plants that are not aquatic bed in > $^{1}/_{3}$ vegetated area	points = 1	
Aquatic bed plants and open water cover > $^{2}/_{3}$ 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? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.*	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_____

LAKE FRINGE WETLANDS **Hydrologic Functions** - Indicators that the wetland unit functions to reduce shoreline erosion	Points (only 1 score per box)
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 (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > ¾ of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > ¾ 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_____

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
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	
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	
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 — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	

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	
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	
Total for S 2 — Add the points in the boxes above	

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	
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	
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	
Total for S 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_____

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
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. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.* Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions 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) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream 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

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 >= ¼ ac or >= 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) ___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	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 ¼ 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 ¼ 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 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 4 Scoring: > 9 species: points = 2 (4-9 species: points = 1) < 4 species: points = 0	1
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.* (**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__ 0