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BEFORE THE STATE OF WASHINGTON  
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of the Application of:

Scout Clean Energy, LLC, for  
Horse Heaven Wind Farm, LLC,  
Applicant

Docket No. EF-210011

MOTION TO SUPPLEMENT THE RECORD

ATTACHMENT A

**In the Matter Of:**

In Re: Scout Clean Energy, LLC

**MICHAEL RITTER**

*May 31, 2023*

*Job Number: 985309*

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BEFORE THE STATE OF WASHINGTON  
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of the Application of: ) DOCKET EF-210011  
)  
Scout Clean Energy, LLC, for )  
Horse Heaven Wind Farm, LLC, )  
Applicant. )



DEPOSITION UPON ORAL EXAMINATION OF MICHAEL RITTER

May 31, 2023  
9:07 a.m.  
1030 North Center Parkway  
Kennewick, Washington

TAKEN AT THE INSTANCE OF THE PETITIONER

JOB NUMBER 985309  
REPORTED BY:  
DANI WHITE, CCR NO. 3352

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MS. PAMELA K. MINELLI (via videoconference)  
MR. PAUL KRUPIN (via videoconference)  
MS. KAREN BRUN (via videoconference)  
MR. DAVE KOBUS (via videoconference)  
MR. TROY RAHMIG (via videoconference)  
MR. ERIK JANSEN (via videoconference)

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I N D E X

In the Matter of the Application of: SCOUT CLEAN ENERGY,  
LLC, FOR HORSE HEAVEN WIND FARM, LLC  
DOCKET NO. EF-210011  
March 31, 2023

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1 BE IT REMEMBERED that on Wednesday, May  
2 31, 2023, at 9:07 a.m., at 1030 North Center  
3 Parkway, Kennewick, Washington, the deposition of  
4 MICHAEL RITTER was taken before Dani White,  
5 Certified Court Reporter. The following  
6 proceedings took place:

7  
8 MICHAEL RITTER, being first duly sworn to tell  
9 the truth, the whole truth and  
10 nothing but the truth,  
11 testified as follows:

12  
13 EXAMINATION

14 BY MS. VOELEKERS:

15 Q. Okay. We are on the record. Good morning,  
16 Mr. Ritter.

17 A. Good morning.

18 Q. My name is Shona Voelekers. I'm an attorney for  
19 the Confederated Tribes and Bands of the Yakama Nation.  
20 This deposition is being taken under the Washington  
21 State Rules of Civil Procedure.

22 Can you please state and spell your full name  
23 for the record?

24 A. Michael William Ritter. M-i-c-h-a-e-l  
25 W-i-l-l-i-a-m R-i-t-t-e-r.

1 Q. And for the record, we have your legal counsel  
2 joining us remotely today, as well as counsel for a  
3 number of other parties in the proceedings.

4 Have you ever been deposed before?

5 A. Yes.

6 Q. When were you last deposed?

7 A. Approximately 1989.

8 Q. So I'm going to talk about some ground rules as  
9 a refresher for today's deposition. The goal is to help  
10 us get a clear transcript and all of your personal  
11 knowledge of things that you do know.

12 Everything we both say is being recorded by our  
13 court reporter, so it's important that we speak clearly.  
14 Instead of saying "uh-huh" or "huh-uh," can you please  
15 say "yes" or "no" today?

16 A. Yes.

17 Q. It is also important that we don't speak over  
18 each other today, so please wait until I finish each of  
19 my questions before answering, even if you think you  
20 know what the rest of the question will be, okay?

21 A. Yes.

22 Q. You've just taken an oath that requires you to  
23 tell the whole truth and nothing but the truth during  
24 this deposition, do you understand that?

25 A. Yes, I do.

1 Q. This is the same oath that you would take if you  
2 were to testify in court, do you understand that?

3 A. Yes, I do.

4 Q. We are here today to find out everything you  
5 know about the topics we discuss. Can you please give  
6 full and complete answers?

7 A. Yes.

8 Q. If you remember additional information later on  
9 in the deposition, will you tell me?

10 A. Yes.

11 Q. If I ask an unclear question, will you let me  
12 know so that I can rephrase the question?

13 A. Yes.

14 Q. If I use a term that you are unsure of, will you  
15 let me know so that I can explain the term?

16 A. Yes.

17 Q. When I use the term "project" today, I'm  
18 referring to the Horse Heaven Hills Wind and Solar Farm,  
19 do you understand that?

20 A. Yes, I do.

21 Q. When I use the term "Scout," I'm referring to  
22 Scout Clean Energy, LLC, do you understand that?

23 A. Yes, I do.

24 Q. I'm not going to ask you anything today about  
25 conversations between you and your legal counsel or for

1 information that's otherwise protected by the attorney-  
2 client privilege.

3 My understanding is that you are represented in  
4 this proceeding by Mr. Randy Head; is that correct?

5 A. Yes, it is.

6 THE COURT REPORTER: One second.

7 (Ms. Brun joined the videoconference.)

8 MR. HEAD: So for clarity, I represent the  
9 Washington Department of Fish and Wildlife, and I'm here  
10 in that capacity, as Mr. Ritter is an employee of the  
11 Washington Department of Fish and Wildlife. I think  
12 that may be part of the hang up. But yes, I am here to  
13 defend this deposition on behalf of the department.

14 (Mr. Krupin joined the videoconference.)

15 MS. VOELEKERS: Thank you. We just had an  
16 unidentified individual join us.

17 THE COURT REPORTER: Can whoever just joined us  
18 with the 509 number please identify yourself?

19 MR. KRUPIN: I don't know if you can hear me,  
20 but this is Paul Krupin.

21 THE COURT REPORTER: Okay. Thank you.

22 MS. VOELEKERS: Okay. I'll continue.

23 Q. (By Ms. Voelekers) While I expect that your  
24 work on the project has involved conversations with  
25 Mr. Jon Thompson, my understanding is that he represents

1 the Energy Facility Site Evaluation Council in this  
2 proceeding and does not represent you directly; is that  
3 correct?

4 A. Yes.

5 Q. Any conversations between you and Mr. Thompson  
6 are not protected from attorney-client privilege, and so  
7 unless an answer involves privileged communications with  
8 Washington Department Fish and Wildlife's legal counsel,  
9 I do ask that you answer every question, even when one  
10 of the attorneys makes an objection, do you understand?

11 A. Not entirely.

12 Q. Okay. I will ask that you answer every question  
13 that does not involve privileged communication which is  
14 communication between you and your -- and WDFW's legal  
15 counsel.

16 A. Yes. Okay.

17 Q. If there is another question where an attorney  
18 makes an objection, I will still ask that you go ahead  
19 and answer that question unless Washington Department of  
20 Fish and Wildlife's legal counsel instructs you  
21 otherwise.

22 A. Thank you.

23 Q. Do you understand that now?

24 A. Yes. Yes.

25 Q. And I'm going to use some acronyms. I just did

1 so --

2 A. Yeah.

3 Q. -- Washington Department of Fish and Wildlife  
4 I'm going to refer to as WDFW today, do you understand  
5 that?

6 A. Yes.

7 Q. The Energy Facility Site Evaluation Council I'll  
8 be referring to as EFSEC, do you understand that?

9 A. Yes.

10 Q. That will save us some.

11 A. Yes.

12 Q. You were served with an amended subpoena for  
13 this deposition which includes certain sideboards about  
14 what I will be asking about today. Have you reviewed  
15 that amended subpoena?

16 A. Yes, I have.

17 Q. We're here today to better understand your  
18 personal scientific opinion and analysis of the project.  
19 If you're -- if Washington Department Fish and  
20 Wildlife's legal counsel has any concerns about the  
21 scope of a specific question that I ask, WDFW's legal  
22 counsel and I can resolve that concern after the  
23 deposition concludes.

24 I anticipate that between my questions and those  
25 of the other parties who are joining us here today, we

1 will be talking for a while today. I plan to take a  
2 break every 60 minutes. If you need a break before  
3 then, will you let me know?

4 A. Yes.

5 Q. I only ask that you answer the most recently-  
6 asked question before taking a break; is that okay?

7 A. Yes.

8 Q. Is there any reason, medical or otherwise, why  
9 you cannot give full, complete, and accurate testimony  
10 during today's deposition?

11 A. No.

12 Q. Okay. Now we're through the ground rules.

13 I'd like to turn to your education and training.  
14 What schools --

15 A. May I ask a question, please?

16 Q. Yes.

17 A. Back to the question on personal scientific  
18 information, can you read that again, please, the first  
19 part? It was just one of the last few questions.

20 Q. I am here today to better understand your  
21 personal scientific opinion and analysis of the project.

22 A. Okay. May I ask a question regarding that?

23 Q. Yes.

24 A. I thought the amended -- the subpoena precluded  
25 my opinion. Personal scientific -- when you said the

1 word "personal," it sounded like my opinion, something I  
2 feel, right? And I don't -- I want to give you my  
3 scientific understanding, not -- so anyway.

4 Q. So I will be asking you questions today about  
5 your opinions, personal and scientific, about the  
6 project itself.

7 A. Got it.

8 Q. I will not be asking for your opinions about the  
9 ongoing environmental analysis that EFSEC is conducting  
10 pursuant to the state Environmental Policy Act.

11 A. All right. Thanks for the clarification. Thank  
12 you.

13 Q. And if there is a question that -- where it  
14 appears that that might be crossing that line, I ask  
15 that you still answer the question, and then I can  
16 resolve that with the counsel for Washington Department  
17 of Fish and Wildlife; is that okay?

18 A. Thank you. Yes. Thank you.

19 Q. Okay.

20 A. And I'm sorry if I -- is that okay if I ask a  
21 question like that? I don't --

22 Q. It is very important that we make sure that we  
23 understand what we are saying to each other.

24 A. Very good. Thank you.

25 Q. Yes. There are times where I may make

1 statements, but if I'm asking a question and I'm asking  
2 for you to say yes or no, then we do need to make sure  
3 that you understand the question.

4 A. Got it. Okay. Thank you.

5 Q. Okay. Any other questions about what we've  
6 discussed so far?

7 A. No.

8 Q. Okay. So turning to your education and  
9 training.

10 A. Uh-huh.

11 Q. What schools have you studied?

12 A. For college?

13 Q. All after high school.

14 A. After high school. University of St. Thomas in  
15 St. Paul, Minnesota, for undergraduate. And University  
16 of Nebraska - Lincoln for master's.

17 Q. What degree did you obtain at the University of  
18 St. Thomas in St. Paul, Minnesota?

19 A. BA in biological sciences.

20 Q. What year did you graduate with that degree?

21 A. 1985.

22 Q. What degrees did you earn at the University of  
23 Nebraska - Lincoln?

24 A. Master's degree in forestry, fisheries, and  
25 wildlife.

1 Q. What year did you earn that degree?

2 A. Not 100 percent sure. 1994.

3 Q. Did you obtain any other certificates or  
4 training between 1985 and 1994?

5 A. Can I ask for a clarification on that  
6 certificate or training? Related to education, I  
7 mean...

8 Q. Yes. Did you receive any other education  
9 related to biology in that time?

10 A. I don't recall.

11 Q. Any other education related to forestry?

12 A. Don't recall.

13 Q. Any other education related to fisheries?

14 A. I don't recall.

15 Q. After 1994 -- excuse me. After finishing your  
16 master's degree, did you receive any additional training  
17 in biology or related fields?

18 A. Yes.

19 Q. Can you please list those for me?

20 A. I'm not going to recall all of them, but  
21 endangered species boot camp for new federal employees.  
22 Probably I don't know if that's a correct term but I  
23 remember that. It was in Portland, Oregon. That would  
24 be the main one. There was -- I don't recall all of  
25 them. I was with the federal government at the time,

1 and there was lots of different trainings and type  
2 things to go to so...

3 Q. Do you have an updated CV with those listed  
4 trainings that you could provide if I asked for it after  
5 this deposition?

6 A. I could look for that, yes.

7 Q. What trainings have you received that are in  
8 biology-related fields that are relevant to your current  
9 position?

10 A. What trainings have I --

11 Q. Yes, have you received.

12 A. Relevant to my current position as the lead  
13 planner of solar and wind, there has been -- I don't  
14 recall. I would have to look at that.

15 Q. Okay. Who is your current employer?

16 A. Washington Department of Fish and Wildlife.

17 Q. What is your current position?

18 A. The lead planner for solar and wind energy  
19 development.

20 Q. How long have you been in this position?

21 A. Since September of last year.

22 Q. Is this a new position or was --

23 A. Yes. Yes. I'm sorry.

24 Q. So you're the first lead planner for wind and  
25 solar for WDFW?

1 A. I don't recall -- yes.

2 Q. Did you hold other positions within WDFW before  
3 becoming lead planner of wind and solar?

4 A. Yes.

5 Q. Can you please list those?

6 A. Prior to formally being selected as the lead  
7 planner, I was the statewide technical lead for wind and  
8 solar development as well as the habitat biologist for  
9 Benton and Franklin Counties. So two positions at the  
10 same time for approximately maybe four years.

11 And prior to that, I was hired by the agency as  
12 the wind energy biologist. So when wind energy started  
13 in the state 15 years ago, I was hired into the position  
14 as a wind energy biologist.

15 Q. Did you hold any other positions within WDFW  
16 between when you were hired as a wind energy biologist  
17 and when you became the habitat biologist for Benton and  
18 Franklin Counties?

19 A. No.

20 Q. Where did you work before being hired by WDFW?

21 A. I worked with the U.S. Fish and Wildlife Service  
22 at the Hanford Reach National Monument here in the  
23 Tri-Cities.

24 Q. What was your position with the U.S. Fish and  
25 Wildlife Service?

1 A. Deputy project leader.

2 Q. How long were you in that position?

3 MR. HEAD: Excuse me. Just it's not an  
4 objection, but Shona, I'm having a hard time hearing  
5 your questions. It's a little quiet. If you wouldn't  
6 mind speaking up a little more.

7 MS. VOELEKERS: Absolutely. Thank you, Randy.

8 A. How long had I held that position, was that the  
9 question, right?

10 Q. (By Ms. Voelekers) How long were you the  
11 Hanford's deputy project leader for U.S. Fish and  
12 Wildlife Service?

13 A. Approximately six years.

14 Q. Are you still the area habitat biologist for  
15 Benton and Franklin Counties?

16 A. No.

17 Q. Who is the area habitat biologist for --

18 A. Troy -- I'm sorry.

19 Q. -- Benton and Franklin Counties?

20 A. Troy Maikis, M-a-i-k-i-s.

21 Q. What division or program at WDFW do you work  
22 within?

23 A. The habitat program.

24 Q. Who are your direct supervisors?

25 A. Ben Blank is my direct supervisor.

1 Q. Who is Ben Blank's direct supervisor?

2 A. Michael Garrity.

3 Q. What does your work as lead planner of wind and  
4 solar entail?

5 A. It entails reviewing project documents,  
6 coordinating internally within WDFW to review those  
7 projects, scheduling and participating in meetings  
8 internally and externally about the project, preparing  
9 draft comments related to any phase of the project,  
10 working internally to finalize those comments, and then  
11 submitting those comments on behalf of the agency.

12 Q. Are you the only employee of WDFW who submits  
13 WDFW's comments on green energy projects or renewable  
14 energy projects?

15 A. No, I'm not.

16 Q. Who else submits comments on behalf of WDFW  
17 regarding --

18 A. Emily Grabowski and Michelle Hubert.

19 Q. Just for consistency, I will use the term  
20 renewable energy developments today; is that okay with  
21 you?

22 A. Yes.

23 Q. And I will be using that term to mean wind,  
24 solar, non-carbon emission energy projects; is that okay  
25 with you?

1 A. Yes.

2 Q. Okay. Which factors determine whether or not  
3 you are the representative for WDFW commenting on a  
4 specific project?

5 A. Both Michelle and Emily were hired on March 1st  
6 to help me and help the program manage our involvement  
7 with renewable solar and wind projects.

8 (Mr. Krupin exited the videoconference.)

9 A. And I'm being distracted by the dingger.

10 Q. Yeah, this is districting. Okay. Sorry.

11 So going back. So Emily Grabowski and Michelle  
12 Hubert were hired March 1st to help you specifically in  
13 your work?

14 A. Yeah. And you said the question I believe was  
15 what determines whether how I will, if I will, make the  
16 comment, right? Or --

17 Q. What determines whether or not you are the  
18 individual at WDFW who is submitting comments on  
19 renewable energy projects?

20 A. Do you mean under my signature, is that --

21 Q. Under your signature.

22 A. It's a team approach. Emily and Michelle are  
23 both new, so it's been me until they get up to speed.  
24 But what determines it is I am our -- I have been our  
25 field-level representative for the agency. And I'm the

1 one who's interacting -- and now with Michelle and  
2 Emily -- along with the consultants, the project, EFSEC  
3 county permitters, it's appropriate for my level to  
4 submit the comments.

5 Q. So you used the term "field-level  
6 representative."

7 A. Uh-huh.

8 Q. Is it fair to say that you have been the only  
9 field-level representative for WDFW on renewable energy  
10 projects within Washington State in the last four years?

11 A. Yes.

12 Q. You are the field-level representative for WDFW  
13 on every renewable energy project within Washington  
14 State at this point?

15 A. Without -- yeah, but we have Emily and Michelle,  
16 but yes.

17 Q. Up to this point.

18 A. Yes. Yes.

19 Q. And what caused WDFW the need to hire two  
20 additional individuals to help you as the field  
21 representative for WDFW?

22 A. There's a lot of renewable projects, and we  
23 identified the need quite some time ago, and it just  
24 takes time to, you know, get things into the budget and  
25 get all that staffing worked out.

1 Q. Is it fair to --

2 MS. VOELEKERS: Do we take a break?

3 (Mr. Krupin entered the videoconference.)

4 MS. VOELEKERS: Do we take a break?

5 THE COURT REPORTER: It's okay.

6 Q. (By Ms. Voelekers) Is it fair to say that the  
7 volume of renewable energy development in Washington  
8 State caused WDFW to increase its staffing in response  
9 to that volume?

10 A. I think that's fair, yes.

11 Q. What types of work product besides public  
12 comments do you create as the lead planner of wind and  
13 solar?

14 A. Work products besides public comments. Emails  
15 are the big thing. So work products, a draft. Lots of  
16 draft documents to circulate to get responses from the  
17 agency.

18 Q. What types of external work product do you  
19 create as the lead planner of wind and solar?

20 A. External beyond public or --

21 Q. Beyond comment letters.

22 A. External beyond -- I don't recall that there's  
23 any.

24 Q. So you do not create or publish reports about  
25 specific impacts to wildlife or habitat?

1 A. Correct, I do not.

2 Q. Your work as lead planner of wind and solar  
3 relies upon your colleagues within WDFW's publications  
4 on the science or data regarding impacts to wildlife and  
5 habitat?

6 A. No.

7 Q. I can rephrase that.

8 A. Please.

9 Q. Does your work rely upon your colleagues as well  
10 as other professionals in the field of biologies,  
11 publications, or other scientific analyses in order to  
12 evaluate impacts of renewable energy fulfillment?

13 A. Yes.

14 Q. Thank you.

15 How is your position currently funded?

16 A. I do not know.

17 Q. Do you know if the position -- if the funding  
18 for your position has changed recently?

19 A. I don't know.

20 Q. Do you know how your position as habitat  
21 biologist for Benton and Franklin Counties was funded?

22 A. I do not.

23 Q. Do you know how your position as wind energy  
24 biologist for WDFW was funded?

25 A. I do not.

1 Q. Do you know how any of your work for WDFW has  
2 been funded?

3 A. Yes.

4 Q. What do you know about the funding for your  
5 work?

6 A. That's a broad question. Part of the work with  
7 renewables is via contract with EFSEC, so I'm certain  
8 that by using a charge code, my time is coded to a  
9 renewable project.

10 Q. Are you aware of any other funding sources of  
11 your work at WDFW?

12 A. In a way, yes. I mean, I know I'm getting paid  
13 out of a general fund that our agency got from the  
14 legislature, but other than that, no.

15 Q. Okay. I'd like to talk now about your general  
16 knowledge of the Horse Heaven Hills area. Did you work  
17 in the project area generally known as the Horse Heaven  
18 Hills prior to your involvement with this specific  
19 project?

20 A. Yes.

21 Q. What work did you do in the vicinity of the  
22 project area?

23 A. There were three other renewable projects on  
24 that landscape before Horse Heaven so I had been up  
25 there with personnel from those projects to look at

1 those sites.

2 Q. When you say "three other renewable projects,"  
3 did any of those projects move forward?

4 A. Yes. They all became the Horse Heaven Hills  
5 project.

6 Q. Did you work in the project area before your  
7 involvement with those three renewable projects?

8 A. Give me a moment to recollect here. I don't  
9 recall.

10 Q. Okay. What were your job responsibilities as  
11 the area habitat biologist for Benton and Franklin  
12 Counties?

13 A. To work with the local governments to make  
14 recommendations for them to implement and use their  
15 critical area ordinances for the protection of and  
16 conservation of fish and wildlife areas, wetlands, steep  
17 slopes, things like that. So it was as a technical  
18 advisory role.

19 Q. Is it your understanding the Horse Heaven Hills  
20 is within a fish and wildlife habitat conservation area  
21 under Benton County's critical areas ordinance?

22 A. I would like to see a map first.

23 Q. Okay. As area habitat biologist for Benton and  
24 Franklin Counties, what was your understanding regarding  
25 which wildlife species and habitat would be of concern

1 for new renewable energy developments?

2 MR. HEAD: I'm going to object to form on that.

3 Q. (By Ms. Voelekers) Okay. Please answer the  
4 question.

5 A. Okay. Can you repeat the question, please?

6 MS. VOELEKERS: Can you repeat the question,  
7 please, Dani?

8 (Wherein the reporter read back.)

9 A. Again, a broad question. The first few things  
10 that come to mind for habitats are shrub-steppe habitats  
11 or any native habitats, so I'm being broad here. And  
12 for wildlife, the things that come to mind in Benton and  
13 Franklin Counties are Townsend's ground squirrels,  
14 ferruginous hawk, and then a variety of landscape  
15 connectivity and corridor issues that may include  
16 jackrabbits and mule deer, things like that.

17 So broadly, those are the categories that I  
18 would look at when evaluating a project in Benton and  
19 Franklin Counties as a habitat biologist.

20 Q. Have you reviewed scientific studies regarding  
21 wildlife species in the vicinity of the project area?

22 A. No. Well, can you maybe ask the question  
23 slightly differently or rephrase? I'm --

24 Q. Yeah. Have you reviewed any scientific studies  
25 or data regarding wildlife species that live within the

1 vicinity of the project area?

2 A. Yes. Yeah.

3 Q. Can you list those?

4 A. The studies?

5 Q. Yes.

6 A. Would be the -- may I ask a question?

7 Q. Yeah.

8 A. Studies, can you -- what do you mean by study?

9 Q. Reports or --

10 A. Thank you.

11 Q. -- data.

12 A. Thank you.

13 The Arid Lands Initiative Report/Study, the  
14 Washington State Wildlife Habitat Connectivity Study,  
15 the same connectivity study for the Columbia Plateau.  
16 The every two-year reports on pronghorn antelope  
17 surveys, the ferruginous hawk updates and the  
18 publications by Jim Watson and others related to  
19 ferruginous hawks. That's what I recall right now.

20 Q. Is it fair to say that you've reviewed all the  
21 either publically-available or internally-created reports  
22 on wildlife species within the project area?

23 A. "All" is kind of a final word, but yeah, I've  
24 reviewed a lot, right. And may I add to the previous  
25 question when you said reports and studies?

1 Q. Yes.

2 A. There are reports and studies related to the  
3 project as well and I don't know if those are, but -- so  
4 yes.

5 Q. Yes.

6 A. Okay.

7 Q. As you sit here today, is it fair to say that  
8 you cannot recall additional reports or studies about  
9 wildlife impacts of the project that you have not  
10 reviewed in your analysis of the project?

11 A. Please ask that again. Can you? Can you -- no,  
12 just the same way you just asked it. There was a lot in  
13 there to me.

14 Q. I hear you. I don't have it exactly. I'm going  
15 to ask Dani to read it out because I don't have it  
16 written out perfectly.

17 A. Okay.

18 MS. VOELEKERS: Dani, can you read the question,  
19 please?

20 (Wherein the reporter read back.)

21 MR. HEAD: I'm going to object to the form on  
22 that question.

23 A. I don't recall.

24 Q. (By Ms. Voelekers) Okay. When did you first  
25 engage with the project?

1 A. I'm estimating 2020 or 2021.

2 Q. Has your engagement on the project impacted your  
3 understanding regarding the impacts of new solar  
4 developments in the Horse Heaven Hills area?

5 A. Has my engagement -- no, it has not.

6 Q. Has your engagement on the project impacted your  
7 understanding regarding potential impacts of new wind  
8 farm developments in the Horse Heaven Hills area?

9 A. Yes.

10 Q. How so?

11 A. It brought to light the sensitivities of  
12 shrub-steppe habitat and ferruginous hawk nesting  
13 territories in the Horse Heaven Hills.

14 Q. And did you say that the new area habitat  
15 biologist for Benton and Franklin Counties is Troy  
16 Maikis?

17 A. Yes.

18 Q. Has Troy Maikis been engaged on the project  
19 since becoming the area habitat biologist?

20 A. Engaged? No.

21 Q. Have you discussed the project with Troy Maikis?

22 A. Likely.

23 Q. Do you recall discussing the project with Troy  
24 Maikis?

25 A. Yes. May I add a bit more to that?

1 Q. Please.

2 A. I want to clarify. Troy is also a new employee,  
3 so my interactions with him related to the project is  
4 informational. This is in your area of responsibility,  
5 Benton and Franklin Counties, and there's a project here  
6 that you may hear about, because he's interacting with  
7 all the city planners and people like that. So it's  
8 basically as a need -- an aware -- an awareness  
9 discussion, not a detailed discussion, if that...

10 Q. When was he hired?

11 A. Last summer.

12 Q. Last summer?

13 A. Yes.

14 Q. And it's part of your role as lead habitat and  
15 solar -- or lead planner for habitat and solar to make  
16 sure that other staff at WDFW are aware of those  
17 projects and how they might need to pay attention to  
18 them?

19 A. Certainly. Yes. Yes.

20 Q. Before we talk more about the project itself, I  
21 would like to talk about your general process for  
22 engaging new projects or new wind and solar  
23 developments.

24 A. Okay.

25 Q. When do you usually receive notice of a

1 **renewable energy development?**

2 A. We, WDFW, receives notice when our -- primarily,  
3 we receive notice when our priority habitat and species  
4 office in Olympia receives a request for data --  
5 sensitive data associated with a renewable area. Those  
6 requests usually will need to include a shape file so  
7 that we know what area to give them data for.

8 When that information goes to Olympia, they send  
9 us an email saying, We've just processed this request  
10 for information, here's the shape file. So that's  
11 primarily how we hear about these projects.

12 Q. So is it fair to say that you learn of new  
13 renewable energy projects shortly after an applicant  
14 contacts WDFW?

15 A. Yes.

16 Q. What is your level of engagement with the  
17 project initially -- sorry -- with any renewable energy  
18 project?

19 A. Initially, there's -- initially. Initially.  
20 That's -- there's an introductory meeting that the  
21 project will reach out to us and say, We would like to  
22 introduce the project to you, we've -- and that's how it  
23 happens.

24 Q. So your engagement on projects starts with a  
25 introductory with the project applicant?

1 A. Yes.

2 Q. When do you usually receive first drafts or  
3 initial mitigation plans for any project?

4 A. Each project is slightly different on their  
5 timelines so it's hard to just give a general response  
6 on that. But typically about a year after our initial  
7 introductory meeting something is produced by the  
8 project that requires our review input on.

9 Q. Are there any steps that you generally take  
10 between the initial meeting and the first draft  
11 mitigation plan?

12 A. Yes.

13 Q. Can you please explain those steps?

14 A. There's a -- if I could just back up to the  
15 shape file data request, because that really kicks off  
16 the process. So there's a -- there's an internal  
17 discussion about the project and the shape file location  
18 and data. We want -- as we talked about earlier, we  
19 want WDFW staff to be aware of these projects and what's  
20 happening in their particular area of responsibility.

21 So there's internal coordination and there may  
22 be a couple of small virtual meetings internally about  
23 the project just to say, you know, Can we get your  
24 initial feedback, is there anything that we need to be  
25 aware of? "We" being me, Emily, Michelle, perhaps Ben,

1 maybe Michael, need to be aware of that -- you know, if  
2 it's a sensitive area, if not. So that kicks off that.  
3 And then we get that feedback in, the three of us do,  
4 and we keep it in a file, right?

5 And then there's a period of quietness for that  
6 particular project, there's other things going on. And  
7 then we'll get the request for the, you know, the  
8 introductory meeting, and we'll participate in that, and  
9 we'll see more about the project. We'll see if maybe  
10 they've done a round of surveys or not. And then it's a  
11 meet and greet, you know, with the project and their  
12 consultants.

13 And then we'll say, Yeah, we look forward to  
14 working with you. There could be -- the permitting  
15 authority might be part of that meeting, it could be a  
16 county permitter or it could be an EFSEC project. So  
17 there's all kind of meeting and greeting going on.

18 And then depending on project speed and  
19 timelines, there could be a quiet period again, or we  
20 could just start moving right into reviewing reports and  
21 documents. And all the while we're doing internal  
22 coordination to keep WDFW staff up to speed on any  
23 issues. And, you know, just keeps chunking along.  
24 That's kind of a broad overview of how each project  
25 works.

1           **Q. For projects that are not going through EFSEC's**  
2 **screening process, do other regulators also join those**  
3 **intro meetings?**

4           A. You said "other regulators"?

5           **Q. Yes.**

6           A. Yeah. County permitting staff. So yeah,  
7 because the project would be going through county  
8 permitting.

9           **Q. Correct.**

10          A. So the planners would be on there and things  
11 like that from the county, yes.

12          **Q. So these intro meetings are not just between**  
13 **WDFW and the project applicant?**

14          A. No. But sometimes they might be, but most of  
15 the times I do recall there's other folks involved,  
16 because we all want to -- we all want to be on the same  
17 page as the project moves forward, you know. So it's  
18 important to have those folks there.

19          **Q. And the permitting agency, county or EFSEC, has**  
20 **the opportunity to ask questions of WDFW during these**  
21 **meetings?**

22          A. Oh, certainly. Yes. It's a very interactive  
23 and active exchange even post meeting, you know, just  
24 to -- for clarification, to make sure we're on the same  
25 page -- pages, yeah.

1 Q. Do these -- I'm going to use the word  
2 collaborative, if that's accurate here --

3 A. Uh-huh.

4 Q. Would you characterize it as collaborative  
5 meetings?

6 A. Parts of it, yes.

7 Q. Do these collaborative meetings continue after  
8 an application has been submitted to either a county or  
9 EFSEC?

10 A. Collaborative -- yes, in a sense. I mean, we --  
11 at these intro meetings, it's a larger group, let's say.  
12 And as we start moving down towards project  
13 implementation, there may be meetings related to more  
14 habitat issues so there's more habitat people in there,  
15 let's say. There may be another meeting scheduled  
16 that's more related to wildlife so we might have some  
17 more wildlife staff involved that wouldn't necessarily  
18 be involved in the habitat. There may be a meeting  
19 about discussion much later on that wouldn't sometimes  
20 have the people related to wildlife in it.

21 So there's kind of these smaller groups, but  
22 again, it's usually there's a lot of the same personnel  
23 in them, like it might be the same EFSEC person all the  
24 time because they're leading it. I'm always the same  
25 person for WDFW or it could be Michelle or Emily now.

1 But yeah. Yeah. There does seem to be some people that  
2 peel off, you know, as we get more focused.

3 Q. Is it -- yeah, so it fair to say that those  
4 become -- those meetings between the applicant, the  
5 regulator, and WDFW become more focused on specific  
6 issues?

7 A. Yes, they can. Yes.

8 Q. In your experience, does your involvement on  
9 behalf of WDFW in these earlier discussions benefit the  
10 regulator?

11 A. Yes.

12 Q. In your experience, does your involvement in  
13 these earlier discussions benefit the applicant?

14 A. Yes.

15 Q. How so?

16 A. Well, from a regulator perspective, they -- I  
17 guess characterizing it broadly, they're not biologists,  
18 so they appreciate your input, our recommendations, our  
19 technical advice, so they appreciate that so they can  
20 get -- I don't know, to see how the regulations fit in  
21 with what we're saying about wildlife and habitat.

22 And how does the project benefit? They hear our  
23 concerns up front, as soon -- well, as soon as we can  
24 deliver them, you know. So I think that that benefits  
25 them because they know what our issues are.

1           Q. Are there times when the concerns that you are  
2 identifying on behalf of WDFW change throughout this  
3 process, this dialogue with the applicant?

4           A. Yes, they have changed.

5           Q. In what ways might your representation of WDFW's  
6 concerns change?

7           A. Based on science and sound biology, there's  
8 reports, studies that are probably going on right now  
9 that would inform our decisions in the next couple  
10 years. And so best available science happens when it  
11 happens, you know, and we need to rely on it. So that's  
12 how it might change.

13           We might say initially -- I mean, it could just  
14 be because the data is better. The science is out  
15 there. It's been peer reviewed, you know.

16           Q. Would the concerns that you are identifying as a  
17 lead planner also potentially change as details of any  
18 specific project become more clear?

19           A. Details about the project, like?

20           Q. If a project design changes or is clarified  
21 throughout this pre- and post-application process --

22           A. Uh-huh.

23           Q. -- would it be fair for that to also impact the  
24 concerns that you may be voicing on behalf of WDFW?

25           A. Thank you for that clarification. Yes, it

1 would. Yes.

2 Q. And why is that?

3 A. If the project changes, it changes how we  
4 address impacts and what areas are going to get  
5 impacted, so yeah, that's how it changes.

6 Q. Do you provide input to project applicants that  
7 include any recommendations for changes to project  
8 designs?

9 A. Yes.

10 Q. In what ways?

11 A. We -- we would recommend -- we make  
12 recommendations, that's our role, is to make  
13 recommendations to the permitting authority, not to the  
14 project. We make it to the permitting authority. It's  
15 their role to somehow implement that -- or anyway. We  
16 might make recommendations to avoid sensitive wildlife  
17 and habitats. Could you re-site the project in this  
18 area to avoid that over there?

19 Q. So discussions about potential alterations to  
20 the project happen in meetings that involve the  
21 applicant but are made to the regulating agency by WDFW?

22 A. Yes. Yes.

23 Q. When you are reviewing proposed mitigation plans  
24 for projects, who all do you consult with to determine  
25 the adequacy of a mitigation plan?

1           A. Depending on the habitats and wildlife impacted,  
2 it could be a variety of WDFW staff. I would typically  
3 include the local wildlife biologist as well as the  
4 local habitat biologist because they have expert  
5 knowledge of their areas. I typically include habitat  
6 program managers for an area and/or their deputy or  
7 assistant. Sometimes I include regional directors.  
8 Sometimes I include Ben and Michael.

9           Q. I believe everyone that you just listed is a  
10 member of WDFW; is that correct?

11          A. That is correct.

12          Q. Who do you consult with outside of WDFW when you  
13 are evaluating the adequacy of a mitigation plan?

14          A. Adequacy of mitigation plan, who do I go  
15 outside -- generally no one.

16          Q. Do you have the ability to consult with subject  
17 matter experts outside of WDFW?

18          A. Yes, I would consider them subject matter  
19 experts.

20          Q. Who would you consider subject matter experts?

21          A. This is -- maybe we can rephrase the question.  
22 I -- I'm a little bit confused by --

23          Q. Let me say the question again and then --

24          A. Okay.

25          Q. Do you have the ability to consult with any

1 subject matter expert outside of WDFW?

2 A. Yes, I have the ability to do that.

3 Q. Okay. Have you ever?

4 A. Yes. Yes. Yes.

5 Q. Okay. So is it accurate to say that your  
6 general practice is to consult internally within WDFW  
7 regarding mitigation plans, but there are times where  
8 you have consulted with a subject matter outside of  
9 WDFW?

10 A. Yes.

11 Q. Specifically for your review of mitigation  
12 plans?

13 A. Yes.

14 Q. Are there any constraints on your ability to  
15 consult with subject matter experts outside of the  
16 agency?

17 A. Yes.

18 Q. What are those constraints?

19 A. The one primary constraint that comes to mind is  
20 that mitigation discussions are sensitive, and we're  
21 talking about habitat and wildlife -- primarily habitat  
22 impacts that may include sensitive wildlife, that's why  
23 it's primarily done internally. We're the agency that's  
24 making recommendations to protect and conserve  
25 Washington's fish and wildlife resources.

1           Anyone that I would talk with outside the agency  
2 would be someone who typically is related to where can  
3 we mitigate at, do you know of any areas, what is your  
4 agency's or your organization's view for that landscape,  
5 your conservation areas, just so that we can kind of  
6 make offers and alternatives of how mitigation might go  
7 for a project. That's it.

8           But it's the outside consultation or the outside  
9 visiting with subject matter experts -- I consider them  
10 subject matter experts -- has been extremely limited  
11 because of the sensitive nature of the discussion about  
12 mitigation.

13           **Q. And when you use the term "subject matter**  
14 **experts," what do you understand that to encompass?**

15           A. To me it's -- again, it's my definition, right,  
16 on this one. But it's someone who I hold in high regard  
17 because of their position in the organization or group  
18 they work with and their vision, the way they have  
19 conducted their business to have a vision, a long-term  
20 vision for a landscape conservation, so just...

21           **Q. And that could be a private or public entity?**

22           A. Yes.

23           **Q. Are you including tribes within that definition**  
24 **of subject matter experts?**

25           A. That's a very good question and I don't recall,

1 but -- that's a very good question.

2 Q. Do you consider tribes to be subject matter  
3 experts on wildlife and habitat impacts?

4 A. Yes.

5 Q. Do you understand yourself to be constrained at  
6 all in your ability to consult with tribes when  
7 reviewing mitigation plans?

8 A. Yes.

9 Q. How so?

10 A. I'm very sensitive to the government-to-  
11 government relationship that the State of Washington has  
12 with tribes. I've worked a long time in the Pacific  
13 Islands and worked a lot here with tribes before I  
14 became with Washington's WDFW. I appreciate the field-  
15 level interactions I've had with tribal members  
16 specifically -- well, mostly Yakama. And we have shared  
17 some information about projects, pronghorn and wildlife  
18 in general for this area, but really sensitive to that  
19 government-to-government thing that I just -- I'm a  
20 field-level guy that would like to visit more with folks  
21 about issues in this area but feel slightly constrained  
22 because I don't want to run afoul of that relationship,  
23 that's all, you know.

24 Q. Do you feel constrained at all by an applicant's  
25 concern about sharing of sensitive information with

1 tribes?

2 A. Applicant sharing, can you --

3 Q. Do you feel constrained at all by a -- so we're  
4 still taking generally, not about this project. In  
5 general, do you feel constraint in your ability to  
6 discuss mitigation plans with tribes because of any  
7 concern by applicants on the sharing of sensitive  
8 information?

9 A. I don't recall I have heard any concerns from an  
10 applicant. But do I have a concern sharing sensitive  
11 mitigation information with anyone? Yes. Yes.

12 Q. Okay. So that's not specific to sharing  
13 information with tribal governments?

14 A. Correct.

15 Q. So I was going to use the word "consult."

16 A. Okay.

17 Q. But I want to take a minute here because I want  
18 to use consultation informally.

19 A. Okay.

20 Q. And I understand that you have had a lot of  
21 conversations with the Yakama Nation staff and  
22 leadership at certain points. So when I say "consult"  
23 today, I'm talking about informal, technical-level  
24 conversations with tribal staff.

25 A. Yes.

1 Q. Or individual tribal members.

2 A. Yes.

3 Q. Okay. So at what point do you generally consult  
4 informally with potentially-impacted tribes or tribal  
5 communities specifically regarding mitigation plans.

6 A. I don't recall I have ever shared mitigation  
7 plan information with the tribe, any tribe.

8 Q. What is your understanding about when tribes or  
9 tribal communities become aware of proposed mitigation  
10 plans for projects?

11 A. I am not aware of when that might happen.

12 Q. So in your role evaluating -- this is going to  
13 be my last question and then we'll take a break.  
14 Actually, you know what? Let's take a break and then  
15 I'll come back to this.

16 A. Okay.

17 MS. VOELEKERS: Let's go off the record.

18 (A short recess was had.)

19 MS. VOELEKERS: We can go back on the record.

20 Thank you.

21 Q. (By Ms. Voelekers) So before the break, we were  
22 talking about your review of mitigation plans for  
23 projects.

24 A. Uh-huh.

25 Q. Have you on any project discussed mitigation

1 plans with any staff member of the Confederated Tribes  
2 and Bands of the Yakama Nation?

3 A. I don't recall.

4 Q. Is it fair to say that it's not your general  
5 practice to consult -- discuss mitigation plans with  
6 staff for the Confederated Tribes and Bands of the  
7 Yakama Nation?

8 A. That's correct.

9 Q. When mitigation plans for a particular project  
10 involve monetary compensation, how is the amount of  
11 compensation determined?

12 A. It is determined based on the acres impacted  
13 times a ratio, which is dependent upon habitat type,  
14 times an average per acre value of recent land sales in  
15 the recent area -- in the area.

16 Q. When mitigation plans for projects involve  
17 monetary compensation, who receives that compensation  
18 generally?

19 A. A third party.

20 Q. Can you explain how that works?

21 A. Certainly. WDFW does not accept mitigation  
22 monies. So with all the folks we've been involved with,  
23 the permitting authority, whether it be a county or  
24 EFSEC, perhaps the project as well, we let them know  
25 that we don't accept money, but here's the mitigation

1 formula based on the impacts, do you know of any third  
2 party in the area? Could be a conservation district,  
3 nature conservancy we have afoot here, any other  
4 conservation groups, so that's kind of how we do the  
5 discussion.

6 We try to find a group that will accept the  
7 money, but then continue to work with us and perhaps the  
8 project or someone to make sure we get that money  
9 implemented on the landscape to mitigate for the impacts  
10 of the project.

11 **Q. So it is fair to say that the general purpose of**  
12 **monetary compensation within mitigation plans is to**  
13 **purchase or preserve conservation easements?**

14 A. I think conservation easements would be one of  
15 the tools or one of the outcomes. It could be outright  
16 acquisition of the land, which would again go to a third  
17 party. It could be a -- conservation easements are  
18 typically with the landowner for a long period of time,  
19 so they could receive monetary compensation to conserve  
20 their landscape. So yeah, we try to keep everything  
21 available because we never know what we're going to land  
22 on because it's very challenging to work through the  
23 mitigation negotiations and then get to a final agreed  
24 upon outcome. We want everything to be available just  
25 because conditions change and people change and things

1 like that.

2 Q. And you might identify a potential acquisition  
3 or easement that then is no longer available by the time  
4 the project is permitted?

5 A. Yes.

6 Q. So generally speaking, in your experience, does  
7 part of mitigation plan development include identifying  
8 multiple options for replacement habitat?

9 A. Yes.

10 Q. In your experience, do mitigation plans  
11 generally include specific criteria to ensure that  
12 mitigation habitat provides actual mitigation?

13 A. It's a yes and a no. It really is.

14 Q. Can you explain further?

15 A. Certainly. We -- it -- it's difficult. We're  
16 talking about landscapes that take decades to recover,  
17 decades, you know. So the impact happens and the  
18 outcomes are very important.

19 So we have become more specific about what we  
20 would like to see as an outcome from -- from a potential  
21 impact in the mitigation language, like how are we going  
22 to work towards this mitigation? We need to see  
23 something on the landscape. It's not just money in an  
24 account, but how are we going to get something on the  
25 landscape? So we've become a little bit more specific

1 about that. But again, our role is to make  
2 recommendations.

3 Q. That conversation about how to realize  
4 mitigation on the landscape is happening in these  
5 coordination meetings that occur between the applicant,  
6 the regulator, and WDFW?

7 A. Some or all of those people may be in the  
8 discussions, yes.

9 Q. Were you a contributor to WDFW's 2009 Wind Power  
10 Guidelines?

11 A. Yes.

12 Q. Are the recommended mitigation measures in those  
13 guidelines transferrable to solar projects?

14 A. Yes and no.

15 Q. How so?

16 A. Yes in the types of habitats and general  
17 mitigation ratios are still fairly consistent with the  
18 solar projects. The types of mitigation, as we just  
19 discussed, having all those types available to realize  
20 it on the landscape, whether it be acquisition,  
21 conservation easements, monetary, that's still  
22 consistent. But the impacts are very different between  
23 wind and solar, so that's what's different.

24 Q. So is it fair to say that the recommended  
25 mitigation in those guidelines is not transferable

1 directly to solar projects because the impacts of solar  
2 are different than the impacts of wind?

3 A. Generally, yes. Yes.

4 Q. Can you describe further how those impacts are  
5 different?

6 A. The one that comes to mind -- the impacts are  
7 different. So we have there's temporary and permanent  
8 impacts, both projects have those. Temporary means it  
9 can be fixed in the next several years, permanent means  
10 it's gone forever. And then there's a different  
11 category for solar, which is called we have modified or  
12 altered impacts, which is the area that's underneath the  
13 panels. There's still science out on that, you know,  
14 things change when you shade things.

15 Kind of lost sight of the question there. Can  
16 you -- no, I mean, you don't have it written down,  
17 that's -- please, I've -- what was the question?

18 MS. VOELEKERS: Dani, can you please repeat the  
19 question?

20 (Wherein the reporter read back.)

21 A. Oh, it was an easy question. Thank you. How  
22 the impacts are different.

23 Yeah. And so wind projects tend to be larger,  
24 the landscape still remains open. There's no fence up,  
25 as compared to a solar project which has a fence up. So

1 wind projects are across a larger landscape; solar  
2 projects are in a concentrated area.

3 Solar -- wind projects still allow farming up to  
4 the turbines. They still allow public access, if  
5 needed, for hunting or recreation. Solar projects don't  
6 allow any of that. It's fenced in, it's not farmed, and  
7 there's no more public access. So those are some of the  
8 differences.

9 Q. Is WDFW in the process of developing mitigation  
10 guidelines specific to solar development?

11 A. Yes. But you said mitigation guidelines,  
12 correct? I believe that was what you said.

13 Q. I did.

14 A. Okay. I heard two questions there.

15 Q. Yeah.

16 A. That's why I kind of paused.

17 Q. Okay. What guidance, if any, is WDFW in the  
18 process of creating regarding solar development?

19 A. We are in the discussion phase, very, very  
20 early, very initially about developing solar guidelines.

21 Q. And based upon those initial discussions, what  
22 topics would those guidelines address?

23 A. They generally address an introduction, solar in  
24 Washington State, impacts, different types of impacts as  
25 we just talked about, there would probably be a section

1 on mitigation. Generally those topics.

2 Q. To your knowledge, would those guidelines  
3 include discussion about siting suitability for solar  
4 developments?

5 A. I think that -- that could be on the agenda,  
6 yes, to talk about, I think that would be a reasonable  
7 topic.

8 Q. Have you engaged on the Least Conflict Solar  
9 siting work being conducted by Washington State  
10 University?

11 A. Yes.

12 Q. Do you have any concern about the absence of the  
13 mapping of water resource impacts in that solar siting  
14 least conflict report?

15 A. Absence of water resources?

16 Q. Yes. Are you familiar with the lack of mapping  
17 for impacts to water resources in that report?

18 A. The least conflict doesn't show impacts. It  
19 shows areas that are of concern or have a sensitivity to  
20 stakeholders. So we're not -- and I work primarily with  
21 the conservation group, and we do have layers in there  
22 that show third or fourth order water resources and  
23 wetlands that are -- were included in the map because  
24 they are areas of concern or conservation issues from  
25 some of our stakeholders.

1 Q. For habitat?

2 A. Yes.

3 Q. Yeah. Okay. Let's shift gears to the project  
4 itself.

5 A. Okay.

6 Q. How did you first become aware of the project?

7 A. First became aware either through an  
8 introductory meeting with the project and the  
9 consultants or through EFSEC and their public  
10 announcement that an application had been filed.

11 Q. Were you not involved in the project before an  
12 application was filed with EFSEC?

13 A. I don't recall.

14 Q. Okay.

15 A. I was involved with the three other projects up  
16 there that became the Horse Heaven so it's kind of a --  
17 I mean, I've been involved for a while.

18 Q. So can you please tell me about the other -- the  
19 first three projects that became EFSEC?

20 A. The first -- as I recall, one was called Four  
21 Mile, the other one was Badger Canyon, and I can't  
22 recall the middle one, if -- anyway, my recollection was  
23 that I had visited up on site with two or three  
24 different projects, some of the same consultants and  
25 some different consultants for wind projects in the

1 Horse Heaven Hills.

2 As I described earlier, we had those initials  
3 contacts, maybe a field meeting, and then things go  
4 quiet, and it went quiet for a long time. Some of those  
5 first visits were from 20 -- I was looking back at some  
6 reports yesterday, I would think that I maybe first  
7 visited with some of those projects in 2016 or 2017 up  
8 there, maybe even a year earlier than that. And then it  
9 went quiet until Horse Heaven Hills became known, which  
10 was, to me, maybe was in 2020.

11 Q. And at that point, were you communicating with  
12 Scout as the applicant for the project?

13 A. At what time, when it became Horse Heaven? Yes.

14 Q. Yes.

15 A. Yes.

16 Q. Who were your main points of contact with Scout  
17 regarding the project?

18 A. We should step back here, because it's an EFSEC  
19 project and the protocol is to go through EFSEC to visit  
20 with Scout. There may have been a meeting, I seem to  
21 maybe recollect one maybe where it was just me and maybe  
22 the consultant and Scout, but my recollection is EFSEC  
23 has always been involved with every bit of those. So  
24 it's rare. Does it happen that I reach out directly to  
25 the project? Yes, because I work with their

1 consultants, and we may be quickly swapping some data or  
2 some issues, right? But primarily, it's through EFSEC  
3 so...

4 Q. Okay. So but to the extent that you have  
5 communicated directly with Scout or their consultants,  
6 who have you spoken with or who have been your points of  
7 contact?

8 A. At the project is Erik Jansen with West. He's  
9 my primary person.

10 Q. And has he been your primary point of contact  
11 for Scout since 2020?

12 A. I don't -- I don't know if he was the one that  
13 West was using when the project first started, but he's  
14 the one I had the most history with out there. And  
15 again, I would like to say I don't -- we don't talk or  
16 visit a lot on this project, but we have, you know.

17 Q. Who has been your most -- sorry.

18 Since you first learned of the project in its  
19 2020 design we'll say, its --

20 A. Yes.

21 Q. -- design as the Horse Heaven Hills project --

22 A. Uh-huh.

23 Q. -- have you had concerns about potential impacts  
24 to wildlife species?

25 A. Yes.

1 Q. What are those concerns?

2 A. The -- the two that just come to mind real quick  
3 are impacts to ferruginous hawk and then the impacts to  
4 the connectivity for a variety of shrub-steppe animals,  
5 Townsend's ground squirrels, maybe jackrabbits, mule  
6 deer, things like that, and impacts to pronghorn  
7 antelope.

8 Q. Since you first learned of the project as it is  
9 now Horse Heaven Hills, have you had additional concerns  
10 about impacts to the habitat?

11 A. Additional concerns beyond our original?

12 Q. Beyond what you just listed of the species  
13 themselves.

14 A. I believe the question before you asked about  
15 wildlife and now you're asking about habitat, right?

16 Q. Yes.

17 A. Has there been -- we still remain concerned  
18 about the connectivity, which is not really a habitat  
19 issues but it is. But specific habitats, yeah, we're  
20 concerned about shrub-steppe habitat up in that  
21 landscape.

22 Q. Has your concern about potential impacts to  
23 wildlife or -- and habitat led you to propose design  
24 alterations to the project?

25 A. Yes.

1           **Q. Why?**

2           A. Part of our job as -- you know, serving as a --  
3 working with EFSEC is to provide recommendations to  
4 them. Washington State Department of Fish and Wildlife  
5 supports renewable energy, and our role is to find --  
6 we're trying to recommend workable solutions. So our  
7 alternatives that we talked about, we prepared,  
8 submitted, or whatever, were done with that in mind.  
9 Renewable is -- could be on the landscape but we believe  
10 there were ways to site the project to reduce impacts to  
11 habitats and wildlife that would provide some  
12 conservation and preservation for them, while also  
13 allowing for renewable energy to occur on the  
14 landscaping.

15           **Q. How many different alternative project designs**  
16 **have you proposed?**

17           A. At least one.

18           **Q. Can you please describe that in general terms?**

19           A. In our original comment letter to EFSEC, we  
20 recommended or made the recommendation for an  
21 alternative layout that would include mostly solar on  
22 the south -- southwest side of the project and maybe  
23 have to acquire additional lands. But just to take it  
24 off the ridge line, take it away from the corridors and  
25 connectivity, keep it away from the uplifted and draft

1 areas where raptors use.

2 Q. Have you been involved in discussions about any  
3 other alternative designs?

4 A. Yes.

5 Q. Can you please describe them?

6 A. Alternative designs, the project said they will  
7 be using 244 or 150 machines up on the landscape, which  
8 it makes a difference on impact analysis and things like  
9 that. In the spirit of negotiation and finding a middle  
10 ground, we made a recommendation for removing turbines  
11 within ferruginous hawk core nesting areas, mitigating  
12 habitat through the central portion of the property just  
13 to the west of the highway, allowing wind turbines to be  
14 there but to maybe boost the habitat up through maybe  
15 some enhancements to maintain a connectivity area  
16 through the project, so that's another one we came up  
17 with.

18 Q. Is it fair to say that you proposed that first  
19 one that you talked about about mostly having the  
20 project be solar on the southwest side and fully  
21 removing from the ridge line --

22 A. Uh-huh.

23 Q. -- that's one design alternative?

24 A. Yes.

25 Q. But then you also suggested additional

1 modifications if the design alternative -- if that was  
2 not acceptable so that the project could still have a  
3 less impact on the habitat?

4 A. Yes.

5 Q. I guess what I'm getting at is these aren't two  
6 separate designs that you've proposed on behalf of WDFW?

7 A. They are -- well, that's a good point. Two  
8 separate, at the time, yes. But now, I mean, it's like  
9 our mitigation, we would like to keep things available,  
10 right? So we felt we offered some changes that could be  
11 useful for the project to consider that would provide  
12 conservation as well as renewables, so they're not  
13 exclusive but -- or they're not separate. They could be  
14 but they are not.

15 I mean, it's we made some suggestions and some  
16 ideas, and maybe it would spur some creative juices from  
17 others to say, Well, we could put some solar over there  
18 but we could do this over here, what do you think of  
19 that? It kind of becomes this back and forth of a  
20 negotiation of about how to resite, change, that's all  
21 we were trying to prompt or introduce.

22 Q. What was the general timeline of that back and  
23 forth?

24 A. I don't know. Well, the first one was the first  
25 comment letter in 2021 for the solar, and I don't

1 remember hearing -- I don't recall hearing any feedback  
2 on that from anyone inside or outside the agency.

3 The second, the one about removing turbines from  
4 core areas, central conservation area, things like that,  
5 2022, I do remember -- I do recall having discussions  
6 with EFSEC and the project about those. But I don't  
7 recall hearing anything after that.

8 Q. Okay. Were any of your recommended design  
9 changes incorporated?

10 A. Not that I can see.

11 Q. Do you know why not?

12 A. No, I don't.

13 Q. Do you have any reason to believe that they will  
14 be?

15 A. I don't know. Could I offer some clarification  
16 on some of the -- I guess the siting and alternatives  
17 that were brought up? Through this entire process,  
18 we're not only providing, like, formal comments that  
19 have these ideas memorialized in writing, we're also  
20 exchanging emails at times with EFSEC and the applicant  
21 about little things to think about or to talk about,  
22 right? We may have had field visits. So there are  
23 things that we made recommendations to the project to  
24 EFSEC -- you know, to the project to reduce impacts, and  
25 they have done those.

1           So, you know, like for power line crossings over  
2 a canyon, instead of going right through the middle, can  
3 you move it way up to the head so we can keep it open  
4 more? I think there were things about maybe resiting  
5 some turbines away from ridge line -- or ridge lines a  
6 bit to protect potential impacts from raptors.

7           So along the way, it's very -- it's changing  
8 fast, right? So there are some commitments I did see in  
9 some of the documents produced by the project that  
10 did -- they heard us, right? But when we go back and  
11 talk about moving the solar or the no turbines in the  
12 ferruginous hawk and things like that, no, I don't see  
13 that.

14           **Q. Do you understand that there would be a**  
15 **possibility that the project may still move forward on**  
16 **the design that includes only 150 turbines?**

17           A. Yes.

18           **Q. What is the difference between that potential**  
19 **design and the current project proposed design?**

20           A. Well, there's less turbines. It's 244 or 150.  
21 If it goes through at 150, what's the math there? 94  
22 fewer turbines on the landscape.

23           **Q. Are there any other differences that -- in that**  
24 **layout that would change the impact to wildlife habitat?**

25           A. Less turbines means less impact on the

1 landscape. Is the project still 20-plus miles long?  
2 Yes. Is it still using the same micro-siting corridors,  
3 those are the corridors they would like to put the  
4 turbines in? Yes. There is just fewer turbines on the  
5 landscape. But it's the location of those turbines that  
6 is of interest to us, because some of those turbines are  
7 still within -- even at 150 turbines, some of those  
8 turbines are still within core nesting areas for -- or  
9 core nesting territories for ferruginous hawk.

10 Q. Is that because the micro-siting corridors have  
11 not been moved?

12 A. Correct. Yes.

13 Q. So you produced documents in response to a  
14 subpoena from me.

15 A. Yes.

16 Q. And I also accessed certain documents publicly  
17 online.

18 A. Yes.

19 Q. I want to talk about a couple exhibits with you  
20 to make sure I'm working off the correct copy of one of  
21 your letters.

22 A. Okay.

23 Q. So I'm going to hand you what has been marked as  
24 Exhibit 1 today.

25 A. Uh-huh.

1 (Exhibit No. 1 marked for identification.)

2 Q. Can you take a minute to look at it, please?

3 MR. HEAD: Shona, do we have a copy of these?

4 MS. VOELEKERS: I emailed them this morning.

5 MR. HEAD: I didn't see the numbering. Sorry.  
6 I'm getting a lot of feedback.

7 MS. VOELEKERS: Yeah, I think that if everyone  
8 could please mute yourselves if you're not speaking,  
9 that's what's creating the feedback.

10 MR. HARPER: Yeah, I also wonder, Shona, if I  
11 could just ask you to speak out a little bit more. Your  
12 voice tends to tail off slightly. And I'm getting a lot  
13 of feedback.

14 MR. HEAD: Oh, that mute just fixed the problem.  
15 Thank you.

16 MR. HARPER: Oh, great.

17 MS. VOELEKERS: Can you hear me better now?

18 MR. HEAD: Yeah, that is better. Thank you.

19 MR. HARPER: That's much better.

20 MS. VOELEKERS: Okay. Well, hopefully you can  
21 still hear Mr. Ritter because I'm hogging the mic.

22 MR. HEAD: And just for clarity, the document  
23 we're looking at is 1\_WDFW Memo to EFSEC, it's a January  
24 31, 2023, letter?

25 MS. VOELEKERS: Yes.

1 A. Okay.

2 Q. (By Ms. Voelekers) Do you recognize this  
3 document?

4 A. Yes, I do.

5 Q. What is Exhibit 1?

6 A. It is Washington Department of Fish and  
7 Wildlife's comments on the draft environment impact  
8 statement for the Horse Heaven Hills wind, solar, and  
9 battery storage project.

10 MS. VOELEKERS: Okay. If we could please mark  
11 this as Exhibit 2.

12 (Exhibit No. 2 marked for identification.)

13 Q. (By Ms. Voelekers) I'm handing you Exhibit 2.  
14 Can you please review that closely?

15 A. Uh-huh.

16 Q. Do you recognize Exhibit 2?

17 A. Yes, I do.

18 Q. What is Exhibit 2?

19 A. It's the same document, but it has an incorrect  
20 date on it.

21 Q. Are you the author of both Exhibit 1 and Exhibit  
22 2?

23 A. Yes, I am.

24 Q. Do you know why the exhibits, Exhibits 1 and  
25 Exhibit 2, have different dates?

1 A. My error.

2 Q. Which exhibit is the final version of your  
3 comment letter to EFSEC regarding the draft  
4 environmental impact statement for the project?

5 A. I would want to compare each one of these  
6 exactly and that has redacted or sensitive wildlife  
7 information removed so I don't know if those are the  
8 same so...

9 Q. So the redaction was applied by your legal  
10 counsel.

11 A. Uh-huh.

12 Q. So I don't know what is behind the square. It  
13 appears to be the same map that is not redacted on the  
14 other version.

15 A. Uh-huh. If you could give me a moment, I'm  
16 going to --

17 Q. I'm happy to give you a moment.

18 A. Great. Thank you.

19 They're identical.

20 Q. Okay. So is it not possible today as you sit  
21 here to tell which is the final version of this letter?

22 A. This was the final version until I found out I  
23 had an error on the date only, and then I resubmitted it  
24 to EFSEC with the correct date.

25 Q. Thank you. Understood.

1                   And by "this," you were pointing to Exhibit 2?

2                   A. Which has the incorrect date, which I saw on  
3 there.

4                   Q. So Exhibit 2 is the final version of your  
5 comment to EFSEC, with the exception of an incorrect  
6 date?

7                   A. Correct.

8                   Q. Okay. Thank you.

9                   MS. MCMAHAN: Ms. Voelekers, Tim McMahan here.  
10 If I could just quickly step in for a second. I just  
11 want to raise a concern or objection based upon the  
12 scope of this inquiry and the information you had  
13 received from AG Jon Thompson this morning. I'm not  
14 clear how this is consistent with the sideboard in the  
15 subpoena that you issued for Mr. Ritter.

16                   MS. VOELEKERS: Okay. I had a conversation with  
17 Jon directly this morning and also made comments at the  
18 beginning of this morning's deposition that I am asking  
19 Mr. Ritter to authenticate the documents, and I'm not  
20 asking him about the contents of his communications,  
21 which is consistent with the subpoena.

22                   MR. MCMAHAN: Okay. I appreciate that  
23 clarification, and I believe that is consistent. Thank  
24 you.

25                   Q. (By Ms. Voelekers) A number of the documents

1 that were provided in response to the subpoena included  
2 redactions citing to the same RCW as the redaction on  
3 Exhibit 1. Do you recall if the map that is being  
4 redacted from Exhibit 1 was shared separately outside of  
5 this comment letter with the applicant or the  
6 applicants' legal counsel?

7 A. If it was shared outside our comment letter?

8 Q. Yes.

9 A. I don't recall.

10 Q. Okay. We can move on from these.

11 A. Okay.

12 Q. Thank you for clearing that up.

13 A. You're welcome.

14 Q. So I'd like to talk more in depth about the  
15 impacts of the project on specific species. What is  
16 your understanding of the project's potential impacts to  
17 the Townsend's ground squirrel?

18 A. Potential impacts are unknown.

19 Q. And why is that?

20 A. Based on my recollection, the project did not do  
21 Townsend's ground squirrel surveys, therefore, they  
22 weren't included in any biological report. And based on  
23 my own personal knowledge of working in that landscape,  
24 I'm not sure whether Townsend's ground squirrels are up  
25 there at all.

1           **Q. Based upon your professional knowledge, do you**  
2     **have reason to believe that Townsend's ground squirrels**  
3     **occupy the Horse Heaven Hills?**

4           A. Occupy, it's possible. It's possible. Our  
5     perspective comes from the model data from the  
6     Washington Wildlife Connectivity Landscape Study, which  
7     showed I believe habitat concentration areas and maybe a  
8     least cost pathway for ground squirrels adjacent to  
9     across the project site. So ground squirrel's a  
10    priority species for Washington State. So in evaluating  
11    the project we say, you know, we have some concerns.  
12    But lacking data, we can't get real specific about those  
13    concerns. But we raised the issue.

14          **Q. Does model data in your professional opinion**  
15    **provide enough information to adequately evaluate the**  
16    **project's impact on the Townsend's ground squirrel?**

17          A. No, it does not.

18          **Q. In your professional opinion, what additional**  
19    **information is necessary to adequately evaluate the**  
20    **project's impacts on the Townsend's ground squirrel?**

21          A. Well, No. 1, actual surveys to find out where  
22    they are up there, if they are up there, and the extent  
23    of their colonies. The other thing would be to talk to  
24    our internal folks who are responsible for I guess  
25    overseeing the ground squirrel program. I know they do

1 periodic surveys out on the landscape on a coordinated  
2 effort. That model data is from 10-plus years ago, has  
3 there been any relook at it or just to get some up-to-  
4 date information on the status of ground squirrels in  
5 that general area would be very useful.

6 Q. And is that something that WDFW could assist  
7 EFSEC in acquiring if EFSEC requested that information?

8 A. Yeah, I think that would be -- yes.

9 Q. What is your understanding of the project's  
10 potential impacts to the pronghorn antelope?

11 A. Potential impacts unknown.

12 Q. And why is that?

13 A. Well, I'm not a pronghorn or ungulate biologist  
14 so I don't know. I rely on information from our  
15 wildlife biologist, scientific literature, and there's  
16 not -- I just don't know enough information about it --  
17 about pronghorn and the impacts a project could have on  
18 them.

19 Q. Who at WDFW would have that knowledge in order  
20 to evaluate the impacts on pronghorn antelope?

21 A. I don't -- I don't know. I have worked with  
22 Jason Fidorra, who is the local wildlife biologist, and  
23 he would probably know who to chat with in the agency to  
24 find out more information.

25 Q. Are you aware of any modifications to the

1 project that were made to lessen impact to pronghorn  
2 antelope?

3 A. I'm not aware of any, no.

4 Q. Are you aware of any mitigation measures that  
5 are being proposed as a result of impacts to the  
6 pronghorn antelope?

7 A. No. I'm not aware of any.

8 Q. In your professional opinion, can EFSEC properly  
9 evaluate the project's impacts on pronghorn antelope  
10 without obtaining additional information?

11 A. I would need to consult internally on that one  
12 to get a recommendation to EFSEC. When I say consult, I  
13 mean visit with or meet with local wildlife biologists.  
14 Maybe there's a section manager for, you know, game  
15 species. You know, we just all talk and say what would  
16 we -- what would we want to know about the project and  
17 pronghorns so we could make the best recommendation on  
18 how to move forward with the issue. So that's not a  
19 formal thing when I say "consultation," it's informal  
20 and it's professional.

21 Q. As you sit here today, is it your professional  
22 opinion that additional consultation internally within  
23 WDFW and/or directly with EFSEC is necessary to fully  
24 evaluate the project's impacts on pronghorn antelope?

25 MR. HEAD: Object to form.

1           A. I think from an agency perspective, it would be  
2 very -- it would be a good idea to have that internal  
3 discussion and then loop in EFSEC.

4           Q. (By Ms. Voelekers) And that has not happened  
5 yet to your knowledge with regard to pronghorn antelope?

6           A. I do recall meeting with EFSEC, I believe Jason  
7 was on the call, I believe Jim Watson was because we  
8 were going to talk about another issue, and I believe we  
9 talked about it. But so has something happened, yeah,  
10 but not maybe in the level of detail we needed it to.

11           Q. And was that dialogue regarding impacts on  
12 pronghorn antelopes solely internal within WDFW?

13           A. No. No. It -- there have been a couple -- a  
14 few -- several discussions about impacts to pronghorn  
15 and the project. Some of those have been within WDFW  
16 and others have been with members of the Yakama Nation.

17           Q. What is your understanding of the project's  
18 potential impact to striped whipsnakes?

19           A. Unknown.

20           Q. Why is that?

21           A. There's so little information on them in our  
22 databases, and it's just here in Benton County in  
23 general that I just don't know.

24           Q. In your professional opinion, should additional  
25 information or data regarding striped whipsnakes be

1 **obtained?**

2 A. In my opinion, no. But this is one of those  
3 questions, again, where I would loop internally with our  
4 herpetologist and Jason, of course, would be involved  
5 and say, What do you think, right?

6 And I'm going to say based on a recent  
7 discussion I had on another project, I think  
8 they're going to say, We want more information. We need  
9 to know more about snakes in that landscape before we do  
10 any -- before we make any other recommendations.

11 **Q. What is your understanding of the project's**  
12 **potential impacts to sagebrush lizards?**

13 A. Again, unknown. Sagebrush lizard -- unknown.

14 **Q. Because the information has not been obtained?**

15 A. Well, there's -- sometimes we require site  
16 specific information. Let's say, on, like, for  
17 Townsend's ground squirrels, that would be great to have  
18 site-specific information. Sagebrush lizard, we could  
19 probably since they don't have a huge home range,  
20 they're a little tighter area they live in, perhaps we  
21 could -- and I know there is data from other parts of  
22 the state that talk about habitat requirements and  
23 diets, all kinds of stuff about sagebrush lizards, could  
24 we take that information and use it for the project?  
25 Certainly we could. They are really associated with

1 sagebrush.

2 So to be conservative and to be protective, we  
3 would say, Avoid all shrub-steppe, all sagebrush. That  
4 way if there are sagebrush lizards there, we're  
5 protecting them. And what we have done in that regard  
6 is we have not invested personnel or finances to go out  
7 and survey over 70 -- well, survey a lot of areas within  
8 the project that have shrub-steppe on them, we say, Just  
9 protect it. And in doing so, you not only protect the  
10 sagebrush lizard, you also maybe protect other  
11 shrub-steppe species too. Just avoid it.

12 Q. So in the absence of avoidance, is it your  
13 professional opinion that additional surveys of the  
14 shrub-steppe habitat within the project area are  
15 necessary to fully evaluate impacts to potentially-  
16 impacted species?

17 A. Yes. I guess to be extremely thorough, yes, you  
18 could -- yes.

19 Q. Would that be best practice?

20 A. It would be.

21 Q. What is your understanding of the project's  
22 potential impacts to the American white pelican?

23 A. There are no impacts to the pelican, so I guess  
24 my understanding is pretty good.

25 Q. And why are there no impacts?

1           A. They are a wetland bird species, and while  
2 they -- the reports they got from the project, the  
3 surveys they did, they did record white pelicans, I  
4 don't know how high they were flying, but passing over  
5 the project site because, of course, we've got all the  
6 rivers around here. Is it possible they could hit a  
7 turbine, possibly. But generally, impacts are extremely  
8 low to white pelicans from the project.

9           Q. So for white pelicans, you have sufficient  
10 information to assess the project's potential impacts?

11           A. Generally, yes. Yes.

12           Q. What is your understanding of the project's  
13 potential impacts to eagles?

14           A. Again, it's based on the data from the project,  
15 and our main concern along with the white pelican is  
16 collisions with turbines during nighttime, inclement, or  
17 harsh weather conditions, when birds kind of get a  
18 little confused by the landscape they're flying in.

19           Pelicans -- let me use pelicans as an example.  
20 There's a lot of pelicans around, right, so -- but with  
21 eagles, we have -- did you say which particular eagle?

22           Q. No.

23           A. Okay. You did not. We have two types that may  
24 be around here: Bald eagles and golden eagles. And  
25 typically rely -- since the eagles, we typically rely on

1 information input from the U.S. Fish and Wildlife  
2 Service for understanding -- or not for understanding,  
3 but for making I guess a federal assessment of impacts  
4 and making recommendations. We make our own  
5 recommendations.

6 But do we have enough information? Yeah, based  
7 on the project's reports, I would use Jim Watson, I also  
8 use Jason Fidorra because they kind of got more up to  
9 information, and I say, What do you think? And I say,  
10 Yes, I do think we have got information to assess  
11 impacts to those eagles.

12 **Q. Are there any potential impacts from the project**  
13 **to either eagle species from -- aside from collisions?**

14 **A. Impacts. Collisions. There could be. There**  
15 **could be a loss of prey areas. For example, if -- this**  
16 **is just so we can have some context here. If a colony**  
17 **of Townsend's ground squirrels was found up there,**  
18 **ground squirrels represent a prey item for many raptor**  
19 **species. I don't know if bald or golden eagles even go**  
20 **for Townsend's ground squirrels. But you can see if a**  
21 **solar site was developed or a turbine pad was placed on**  
22 **a colony, we would lose the prey, so that's kind of an**  
23 **indirect impact to eagles.**

24 **Q. Are you aware of any modifications to the**  
25 **project that have been made so far in order to reduce or**

1    **lessen impacts to the eagles?**

2           A. No, I'm -- no.

3           **Q. Are you aware of any modifications to the**  
4 **project that are currently being proposed to reduce**  
5 **impacts to eagles?**

6           A. I don't recall.

7           **Q. What is your understanding of the project's**  
8 **potential impacts to burrowing owls?**

9           A. Unknown. My understanding it kind of goes both  
10 ways here of it could be an impact or it could not be.  
11 If a post, a turbine, or a road is put over a burrow of  
12 any of these animals, it's lost. But if we know that  
13 there's animals up there and where they're located, we  
14 can resite those things to avoid those impacts.

15                 Do we have enough information on burrowing owls?  
16 I cannot recall if they were an animal that was  
17 specifically surveyed for or if they were just recorded  
18 incidentally to other observations or other surveys up  
19 there. But I would regroup with Jason Fidorra, our  
20 local wildlife biologist, he's heavy into burrowing owls  
21 these days because it's the season for them, and ask  
22 him, What do know is up there? Is there anything new up  
23 there?

24           **Q. So in your professional opinion, should**  
25 **additional information be gathered in order to fully**

1 evaluate the project's impacts on burrowing owls?

2 A. No, I think we're good there. I think we're  
3 good there. Burrowing owls -- there's a variety of  
4 things to do, resiting and artificial burrows and all  
5 kinds of things. And they seem fairly receptive to  
6 human disturbances in certain areas to a certain level,  
7 so I think we're good.

8 Q. Okay. I think on that note, we're due for  
9 another break.

10 A. Oh, wow. Okay.

11 MS. VOELEKERS: We can go off the record,  
12 please.

13 (A short recess was had.)

14 MS. VOELEKERS: Yeah, let's go back on the  
15 record.

16 Q. (By Ms. Voelekers) Okay. I would like to keep  
17 talking through specific species.

18 A. Okay.

19 Q. What is your understanding of the project's  
20 potential impacts to the great blue heron?

21 A. My understanding, it's a very good  
22 understanding.

23 Q. And what are the potential impacts of the  
24 project in your understanding?

25 A. The only one that comes to mind is the potential

1 strike with a turbine. It's primarily a wetland bird  
2 species. It can be found up in dryland wheat and  
3 pasture areas maybe looking for a gopher to eat or a  
4 mouse or something like that. But the primary impact  
5 would be with the turbine strike.

6 Q. Are you aware of any modifications to the  
7 project that were made to lessen impacts to the great  
8 blue heron?

9 A. I'm not aware of any that were made.

10 Q. What is your understanding of the project's  
11 potential impacts to the Sandhill crane?

12 A. Good. Good understanding of the impacts to  
13 Sandhill cranes.

14 Q. What are the potential impacts of the project to  
15 Sandhill cranes?

16 A. Turbine strike would be the main one. We have  
17 migration of cranes into the Columbia Basin area maybe  
18 can start in late March but usually through April.  
19 There's actually a large Sandhill crane festival in  
20 Othello to mark their return each year. It's quite the  
21 big celebration. And they are -- flocks of Sandhill  
22 cranes can be heard and seen over the Tri-Cities at  
23 times, and so the big concern would be an impact with  
24 the turbine or turbines.

25 Q. Are you aware of any modifications to the

1 project design that were made to lessen impacts to the  
2 Sandhill crane?

3 A. No, I'm not aware of any.

4 Q. Are you aware of any mitigation that's proposed  
5 to mitigate for the project's impacts to the Sandhill  
6 crane?

7 A. I'm not aware of any, no.

8 Q. In your professional opinion, should there be  
9 any mitigation provisions specific to impacts to the  
10 Sandhill crane?

11 A. Should there be? I don't know. I would like to  
12 regroup internally and ask a specialist in the agency,  
13 relying on best available science and whatever  
14 information they have.

15 Q. What is your understanding of the project's  
16 potential impacts to the tundra swan?

17 A. Very good.

18 Q. What are the potential impacts of the project to  
19 the tundra swan?

20 A. Turbine strikes.

21 Q. Are you aware of any modifications to the  
22 project that were made to lessen impacts to the Tundra  
23 swan?

24 A. No.

25 Q. Are you aware of any proposed mitigation

1     **measures specific to impacts to the tundra swan?**

2             A. No.

3             **Q. In your professional opinion, should there be**  
4     **mitigation provided for potential impacts of the project**  
5     **on the tundra swan?**

6             A. Again, I would like to regroup internally and  
7     ask a specialist.

8             **Q. What is your understanding of the project's**  
9     **potential impacts to the loggerhead shrike?**

10            A. Medium understanding. Not completely good and  
11     not nothing.

12            **Q. For the understanding that you do have, what is**  
13     **your -- what are the potential impacts of the project on**  
14     **the loggerhead shrike?**

15            A. Well, first of all, with all bird species,  
16     there's an avian impact -- I mean, there's a turbine  
17     impact issue, that's for all bird species. And  
18     loggerhead shrikes could primarily be associated with  
19     shrub-steppe habitat, but they're also found in other  
20     associated adjacent habitats.

21            So an impact could be if a turbine or a road or  
22     something or a solar facility was put on shrub-steppe  
23     habitat, thereby, reducing the habitat available for a  
24     loggerhead shrike.

25            **Q. And in your opinion, does EFSEC have enough**

1 information to fully evaluate the project's impacts on  
2 the loggerhead shrike?

3 A. I think they do, I do. Based on the data that  
4 WDFW has just in our databases, the project data that  
5 was collected as part of the avian surveys, I think  
6 there's enough information to -- to evaluate impacts to  
7 loggerhead shrikes.

8 Q. Are you aware of any modifications to the  
9 project that have been made to lessen impacts to the  
10 loggerhead shrike?

11 A. I'm not aware of it or don't recall any.

12 Q. What is your understanding of the project's  
13 potential impacts to the sagebrush sparrow?

14 A. That's a good one. The sagebrush sparrow is  
15 pretty much obligate, which means it needs sagebrush  
16 habitat to live in. And I don't recall from the reports  
17 that were collected by the project if sage sparrows were  
18 found on the project, so I'd like to go back and look at  
19 the data before I fully answer that.

20 But again, it would be an internal discussion  
21 again inside WDFW to say, Do you think we have enough  
22 info to evaluate impacts to these birds out there?

23 Q. If there was data showing the presence of  
24 sagebrush sparrow within the project area, would that  
25 support your recommendation for full avoidance of impact

1 to shrub-steppe habitat?

2 A. I think that's where we would go initially based  
3 on our -- we try to be consistent across the state when  
4 we talk about these impacts from renewable projects to  
5 shrub-steppe habitat and species. And our first thing  
6 in a mitigation sequencing per our mitigation policy is  
7 avoid is the first, then we'll go to minimize, and then  
8 we'll go to mitigate.

9 And along that whole continuum is discussions  
10 with projects and discussions with specialists, you  
11 know, and just trying to get it -- let us land on the  
12 right stop. So yeah, avoid would be the first  
13 recommendation.

14 Q. But just to make sure I'm clear, you have  
15 already recommended avoidance of impacts to the  
16 shrub-steppe habitat within the project area?

17 A. I would need to go back and review our first  
18 initial comment letter or something along those lines to  
19 see if we did make that recommendation.

20 Q. What is your understanding of the project's  
21 potential impact to the sage thrasher?

22 A. Along the same lines as the sage sparrow, which  
23 let's talk internally, let's see if we have enough data,  
24 let's look at our databases, talk to the local wildlife  
25 biologist, is there anything new, and then go from

1     there.

2             Q. So as you sit here today, would you need  
3 additional information to speak to whether or not the  
4 project sufficiently mitigates for impacts to the sage  
5 thrasher?

6             A. Yeah. I would -- I would -- yes, I would need  
7 more information.

8             Q. Okay.

9             A. Yeah.

10            Q. What is your understanding of the project's  
11 potential impacts to the Vaux's swift? I think I'm  
12 pronouncing that wrong.

13            A. Yeah.

14            Q. V-a-u-x's.

15            A. Very limited. I don't have an understanding of  
16 the project's impacts. I don't -- and I believe during  
17 their surveys, I don't even know if they got them on  
18 their surveys. If they did, it wasn't very many. And  
19 in my experience down here as a biologist, I cannot  
20 remember ever seeing them on the landscape around here.  
21 Maybe I didn't know what I was looking at, but they're  
22 not common in this area.

23            So and if I think back through what I'm doing is  
24 there's a lot of data from a variety of wind projects in  
25 the Columbia Basin here, and all these projects do bird

1 surveys, pre-project bird surveys. I don't know that  
2 that bird has been recorded on a -- just maybe a couple  
3 bird surveys, so it's not very common around here. So  
4 impacts to them, as with all birds, is turbine strikes.

5 Q. Has there been a full pre-construction bird  
6 survey for the project?

7 A. Yes.

8 Q. Okay.

9 A. Yes.

10 Q. What is your understanding of the project's  
11 potential impacts to the prairie falcon?

12 A. Medium. It's again based on discussions with  
13 Jim Watson, who's with our agency, raptor specialist;  
14 Jason Fidorra. It's also based on information from the  
15 project's raptor reports. Do we have enough information  
16 to its impacts, I don't want to speak for Jim or Jason.  
17 From my perspective, yes, but again, I would like to  
18 regroup with these guys again to just say, Hey, what do  
19 you think? Are we still on the -- because what happens  
20 is and what we found out with this project is animal  
21 populations cycle up and down.

22 And I believe early on, may not have been this  
23 project, may have been another one, let's say you get  
24 one or two falcons, but you go back three years later  
25 and you get a lot more, it's just the nature of

1 population.

2 So I want to say that I think on this project  
3 there was a period where they didn't have many on a  
4 survey and then a year or two later they did find a lot  
5 more. So, you know, but again, talking with Jim and  
6 Jason would help me a lot.

7 Q. And I know you've mentioned Jason's name a  
8 couple times, what's his last name?

9 A. Fidorra, F-i-d-o-r-r-a.

10 Q. Is it safe to say that Jim Watson and Jason  
11 Fidorra are WDFW's subject matter experts on avian  
12 species in the project area?

13 A. Watson for raptors and Fidorra, he's the  
14 wildlife biologist for Benton and Franklin Counties, so  
15 like a habitat biologist but he's wildlife. Jim comes  
16 from a science background and raptor science; Jason is  
17 field level, more local. I go to both of them. Jim I  
18 really rely on for the raptor stuff with Jason kind of  
19 backing him.

20 But if it comes to songbirds, like the sage  
21 sparrow thrasher, it's Jason, because he's an avid  
22 birder and he knows where they're at in this landscape.  
23 So yes, they're my subject matter experts for the  
24 project.

25 Q. Okay. What is your understanding of the

1 **project's potential impacts to jackrabbit species?**

2 A. Minimal. I believe in one of the modeling  
3 analysis, there was a least cost pathway, which means  
4 the landscape is open so the animal could move across it  
5 easier. In other words, there's not a lot of  
6 development up there. I believe there was one for a  
7 jackrabbit that either went through the project or  
8 borders the project. I'm just looking in my mind's eye  
9 at various GIS layers I remember. And I don't believe a  
10 survey was done specifically for jackrabbit up there.  
11 Again, I would like to visit with Jason to see what he  
12 knows.

13 And I mean, my job as the lead is to really  
14 support our local habitat biologists and our agency. So  
15 while I do write letters under my signature, it's with a  
16 lot of professional input from those people, so  
17 definitely got to consult with them.

18 **Q. Right. Your letters reflect WDFW's collective**  
19 **scientific knowledge?**

20 A. Yes.

21 **Q. In your professional opinion, should surveys be**  
22 **conducted before the project moves forward?**

23 A. Surveys for --

24 **Q. Thank you. Sorry. Jackrabbit specifically.**

25 A. No. I don't believe they need to be done in my

1 professional opinion.

2 Q. And why not?

3 A. I think we have enough data from around the  
4 area, from across Benton and Franklin Counties related  
5 to jackrabbits that we can make a good scientific  
6 assessment of where jackrabbits may or may not occur on  
7 the project site. And from the literature and from  
8 science, we could say how do jackrabbits deal with  
9 disturbances and impacts, and we could make an  
10 assessment without going out on the landscape and doing  
11 surveys for them.

12 Q. What is your understanding of the project's  
13 potential impacts to Townsend's big-eared bats?

14 A. Townsend's big-eared -- project's impacts.  
15 Pretty good. Pretty good. The project before it  
16 formally became the Horse Heaven Hills project, it was  
17 Four Mile on the east, Badger on the west, and I can't  
18 remember the name of the central one, which all became  
19 Horse Heaven Hills. They did bat surveys, and those are  
20 acoustic bat surveys done with devices.

21 These ones were placed at 1.5 meters above the  
22 ground and another one at 45 meters. They were done in  
23 2017 and 2018, and there were four stations only that  
24 had those acoustic recording devices across the whole  
25 site. And I think probably over 90 percent of the bat

1 passes it records the acoustic signature of the bat and  
2 the software can distinguish between high and low  
3 frequency bats.

4           They got 8 of the 15 species in the state of  
5 Washington were recorded out on the Horse Heaven Hills  
6 site. Most of the bats come through our area in fall  
7 migration. There are some resident bats likely around  
8 here, but we lack lots of old buildings, big trees, and  
9 caves for some odd reason out here so this is a  
10 migratory thing. So it could start in August, maybe  
11 September, so you get this pulse of acoustic signals of  
12 these things at that time of year.

13           And probably I'm going to say I think I remember  
14 the numbers, 90 percent of the bat passes were hoary and  
15 silver bats, but I think Townsend's was in there as one  
16 of the 8 of the 15 Washington bat species recorded.

17           And again, just like the birds, the concern with  
18 bats is turbine strikes. Based on -- so that would be  
19 the big concern, but I feel good about the bat data from  
20 the site and our ability to make an assessment of  
21 impacts on bats.

22           **Q. Are you aware of any modifications to the**  
23 **project that have been made to lessen impacts to bats**  
24 **generally?**

25           **A. No.**

1 Q. Are you aware of any modifications to the  
2 project that are being proposed to lessen impacts to bat  
3 species?

4 A. No.

5 Q. Is it your opinion that the project's impacts to  
6 bat species will be sufficiently mitigated under the  
7 current mitigation plan?

8 A. The -- how am I going to get this straight here?  
9 The project has a bird and bat conservation plan. It  
10 was filed as part of their original application in 2021.  
11 I can't remember the exact details of that, if there  
12 is -- I don't -- I don't believe there's any mitigation  
13 in there. But there's probably an adaptive management  
14 type thing that if a large bat fatality event occurred,  
15 something would kick in, but I can't remember the  
16 details of that.

17 Q. Okay. I would like to turn to the ferruginous  
18 hawk now.

19 A. Okay.

20 Q. Does the project as it is currently proposed  
21 provide sufficient exclusionary zones around active  
22 ferruginous hawk sites?

23 A. No, it does not.

24 Q. Why not?

25 A. The -- we -- we -- the project prepared a

1 project layout map that has been shown in a variety of  
2 EFSEC documents. I shows a 244 turbine layout, there's  
3 also a 150 turbine layout. We have made recommendations  
4 along the way to lessen impacts to ferruginous hawks.  
5 And I -- I -- the agency has not seen a change in the  
6 project layout that satisfies our recommendations for  
7 exclusion within core nesting territory areas.

8 Q. And why does the currently-proposed distance  
9 between the micro-siting corridors and the core nesting  
10 areas not provide enough -- sufficient distance?

11 A. Okay. Well, there's a lot -- there's a lot  
12 going on here with the ferruginous hawk, and it's listed  
13 as endangered in the state of Washington. It's had a  
14 massive population and nesting contraction in the state  
15 of Washington over the last ten years.

16 The Horse Heaven Hills area used to have 16 or  
17 17 nesting territories. When we say "nesting  
18 territories," I think if we think of the sparrow in the  
19 back yard, it has a nest site, and it might use that  
20 nest site every year. But the territories for  
21 ferruginous hawk, it has elements and conditions, and  
22 the nest may move around every couple years but  
23 generally a confined area. Sometimes it may be the same  
24 area but old outcrop, and they're not occupied every  
25 year.

1           So god, I can't even remember the question now.

2    I'm so sorry. There's just -- can you --

3           MS. VOELEKERS: Can you read it?

4           THE WITNESS: It was probably an easy question  
5    again.

6                           (A short recess was had.)

7           A. All right. I don't -- I'm not -- not provide  
8    enough distance. The science that was done on wind  
9    power projects on the Oregon/Washington border where  
10   there were ferruginous hawks modeled two areas that the  
11   hawks need a nesting core area and the home range core  
12   area. The home range core area is very large. I think  
13   it's a radius of, I don't know, miles, many miles.

14           Core nesting area has a radius of 3.2 kilometers  
15   of radius. That is the minimum -- we feel the minimum  
16   amount of area required with no turbines, no, you know,  
17   no impact, so these birds can pull -- nest and pull off  
18   young.

19           As its currently I guess or -- mapped, there's  
20   turbines within this core nesting area. And two factors  
21   are displacement from disturbance just by having this  
22   physical structure there and also collision with a  
23   turbine. That's why the current design does not offer  
24   adequate protection for a ferruginous hawk.

25           **Q. And what is the significance of inactive nests**

1     **within that general area?**

2             A. Inactive nests are -- or inactive nesting  
3 territories we like to say --

4             **Q. Okay.**

5             A. -- are -- they are inactive because there's no  
6 birds around or the population is down so far there's  
7 just not enough birds to occupy them. The reason  
8 they're important to us is they represent a site that  
9 the bird has used in the past or birds have used in the  
10 past.

11             Some of these nesting territories have data on  
12 them, some of the data might be zeros because they're  
13 not around for over two or three decades in this  
14 landscape. And by keeping those non-occupied  
15 territories open and with no disturbances within those  
16 core areas, they're available for birds should the  
17 population rise or birds return. So that's why it's  
18 important to keep them around because the birds could  
19 use them again.

20             **Q. Are birds less likely to return --**

21             A. Uh-huh.

22             **Q. -- when there is a wind project in the vicinity**  
23 **of those historic or inactive nesting territories?**

24             A. You said in the vicinity of. We -- again, as I  
25 said this earlier, we have tried to move to a middle

1 ground here where we can have renewable and wildlife and  
2 habitat conservation. So we -- we said the project  
3 could still be there, just nothing in this zone. So I  
4 don't want to say no project because that's not what  
5 we've said in our letter. We support renewables. So  
6 just exclude them from these areas, but it's okay to  
7 have the project, you know, outside the area.

8 Q. Because the birds might still encounter the  
9 project but it won't be within their core activity?

10 A. Right. Yeah, this was based on, you know, Jim  
11 Watson, who's got 30-plus years working with those  
12 raptors, he's felt this was a really reasonable  
13 compromise, to exclude turbines from the core nesting  
14 territory areas and allow the project to build  
15 elsewhere, outside of those areas.

16 Q. And just to be clear, the compromise is how  
17 large of an exclusionary zone?

18 A. Yes.

19 Q. How large is the compromise --

20 A. We --

21 Q. -- that's been proposed?

22 A. We asked for a 3.2 kilometer radius around a  
23 nest site -- a nesting territory.

24 Q. Would the best protection of this endangered  
25 species be a larger exclusionary radius?

1           A. Certainly. If we could go the whole I think  
2   it's -- it's, I don't know, it's probably ten -- it's  
3   large, yes. Yes. It would be, yeah, it would be ideal.  
4   We're an endangered species and we're in the  
5   conservation and recovery mode right now. So anything  
6   we can do to 100 percent protect these areas would be  
7   great, but it's not the world we live in.

8           Q. In your opinion, does the project as it's  
9   currently proposed achieve adequate avoidance of impacts  
10  to ferruginous hawks?

11          A. No, it does not.

12          Q. To your knowledge, is the project located within  
13  a breeding area for the ferruginous hawks?

14          A. Yes.

15          Q. What is the significance or the -- sorry. I'll  
16  take that back.

17                 What is the difference between a breeding area  
18  and other habitats for the ferruginous hawk?

19          A. I guess kind of there's this breeding/nesting  
20  area, so those types of activities related to  
21  reproduction, right? So breeding and nesting kind of  
22  falls within that 3.2 kilometer core area where they can  
23  carry on these activities. It should also be noted  
24  within that 3.2 kilometer area with the exclusion of  
25  structures is also prey items. They have open hunting,

1 so to speak, without the possibility of collision with a  
2 turbine.

3 Q. Is the ferruginous hawk species in active  
4 decline?

5 A. Yes.

6 Q. Can the ferruginous hawk species recover from  
7 this decline if it continues to lose breeding territory?

8 A. Unlikely.

9 Q. To the best of your knowledge, have artificial  
10 platforms been successful in providing mitigation for  
11 impacts to ferruginous hawks?

12 A. I don't recall hearing any success stories  
13 related to artificial nest platforms for ferruginous  
14 hawks, but I would really want to circle back with both  
15 Jim and Jason to say, What do you know? I know that has  
16 come up in a discussion related to this project, but I  
17 think the idea was, let's just protect the spots we know  
18 they use or have used rather than try to put something  
19 artificial out that a raven might occupy or a red-tailed  
20 hawk might occupy instead of a ferruginous.

21 Q. Jim Watson and Jason Fidorra would have more  
22 information on the success, if any, of artificial  
23 nesting platforms?

24 A. Yes.

25 Q. But based upon your understanding, would any

1 success of an artificial nesting platform still be  
2 dependent on the presence of prey species?

3 A. Yes. Yeah.

4 Q. Does the proposed mitigation plan provide full  
5 and adequate mitigation of the project's impacts to  
6 ferruginous hawk?

7 A. I know you've asked a lot of questions about a  
8 mitigation plan, and I thought about it on the break  
9 because I want to be clear. The project has prepared a  
10 variety of reports related to wildlife surveys and  
11 various appendixes on this kind of stuff. I looked  
12 through various EFSEC documents, you know, in  
13 preparation for this, of course, and all that kind of  
14 stuff, there may be a draft mitigation plan for this  
15 project, maybe. But I don't know that there is one.

16 So unless I've looked at so much maybe I forgot,  
17 maybe there is a draft mitigation plan. So I don't  
18 know. You're going to show me something.

19 Q. Can I interrupt you for a second?

20 A. Please. Please.

21 Q. Just to be clear what I'm referring to when I  
22 say mitigation plan --

23 A. Okay.

24 Q. -- I would like to -- I was going to get into  
25 this more in a bit, but I want to put it in front of us

1 now so we're clear with what I'm referring to when I say  
2 "mitigation plan."

3 MS. VOELEKERS: Can we get this marked as  
4 Exhibit 3, please?

5 (Exhibit No. 3 marked for identification.)

6 MS. VOELEKERS: This is Exhibit 5 in the folder  
7 that I -- on the email that I sent today.

8 A. Okay. Yeah.

9 Q. (By Ms. Voelekers) Okay.

10 A. Yep.

11 Q. Have you reviewed this?

12 A. Let me take a peak. Hold on one second.

13 Q. Uh-huh.

14 A. Okay.

15 Q. Are you familiar with this document?

16 A. Yep. Yes, I am. Sorry.

17 Q. What is this document?

18 A. It is the Appendix L: Draft Wildlife and  
19 Habitat Mitigation Plan (New) for the project.

20 Q. So you've had adequate time today to review the  
21 entire document?

22 A. Not today, no.

23 Q. Sorry. Before today.

24 A. I remember reviewing parts of this, but not  
25 probably to the level I need to for today.

1 Q. Okay. We will talk about the specifics in the  
2 document a little bit later.

3 A. Okay.

4 Q. But when I use the term "mitigation plan," I'm  
5 referring to this.

6 A. Good. Okay.

7 Q. Which I understand to be a newer version for the  
8 project. Are you aware of any mitigation measures for  
9 the project in this plan or elsewhere that would provide  
10 full mitigation for the project's impacts to the  
11 ferruginous hawk?

12 A. No.

13 Q. In your professional opinion, is it possible to  
14 provide full mitigation for the project's impacts to the  
15 ferruginous hawk?

16 A. I don't know.

17 Q. What is the importance of shrub-steppe habitat  
18 to the ferruginous hawk?

19 A. It's -- it represents an area where the bird may  
20 forage for prey items, but the bird also uses  
21 agricultural fields, open range land for foraging as  
22 well. So it's just one of those habitats that it might  
23 pass over and it might find something to eat.

24 Q. And so what is the importance of arid  
25 agricultural habitat for the ferruginous hawk?

1 A. Arid?

2 Q. Sorry. What is the importance of agricultural  
3 land to the ferruginous hawk?

4 A. It could represent an area of forage.

5 Q. It could provided habitat to prey species?

6 A. Yes, it could provide habitat for prey species.

7 Q. Are there any other significant threats to the  
8 ferruginous hawk's survival other than loss of prey  
9 species or loss of breeding areas?

10 A. My recollection of those are the two primary in  
11 our area: Loss of nesting territories and loss of  
12 foraging areas.

13 Q. We've talked about the potential for wind  
14 turbine strikes to avian species.

15 A. Uh-huh.

16 Q. For the ferruginous hawks specifically, is it  
17 possible that if the project were to be constructed as  
18 its currently proposed that the ferruginous hawk would  
19 leave the area and, therefore, would not see strikes  
20 from wind turbines?

21 A. I suppose that's a scenario, but that's one I  
22 would like to ask Jim about just to see if, you know,  
23 they show up in an area and go, oh, my gosh, there's  
24 turbines, we're leaving, I don't know if he knows that,  
25 right? I don't know.

1           Q. Jim Watson would be the one to ask that  
2 question?

3           A. Yes. Yes. Yes.

4           Q. Are you aware of any monitoring provisions that  
5 have been proposed for the project to attempt to track  
6 whether the ferruginous hawk leave or decline to return  
7 to the project area once it's constructed?

8           A. I'm not aware of any. When you say, you know,  
9 to determine if a bird or birds come back to area but  
10 leave because there's structures in the way, it implies  
11 that the birds have radios on them, we know who's coming  
12 back, you know, and then we can monitor that change. So  
13 no, I'm not aware of any along those lines.

14          Q. Are you aware of any monitoring provisions  
15 proposed for the project to attempt to determine whether  
16 the ferruginous hawk are continuing to nest within  
17 proximity of the project?

18          A. I don't recall. I would really like to look at  
19 this really again to see if there's something in there.

20          Q. So you don't recall anything at all -- so my  
21 specific my question was not specific to the plan.  
22 Like, do you recall any proposed monitoring that's been  
23 discussed as a potential?

24          A. I don't recall. No, I don't recall.

25          Q. Okay. The ferruginous hawk has been listed as

1 an endangered species under WAC 220-610-010. In general  
2 terms, what do you understand that to mean?

3 A. Listed as endangered?

4 Q. Yes.

5 A. Based on my experience and line of work over the  
6 last 30 years working with endangered species and loss  
7 of habitat, endangered means we're in a bad spot.  
8 Endangered means that the population is declining and  
9 the habitat is being lost sometimes at the same time,  
10 sometimes on a similar track, but sometimes on different  
11 tracks.

12 And that when we look at any type of project  
13 that may influence an endangered species, we look at  
14 things like direct take, harm, disturbance, loss of  
15 nesting areas, loss of adults, all that kind of stuff.  
16 That's what it means to me. It's pretty comprehensive.

17 Q. And pretty serious?

18 A. Yes, it is.

19 Q. What is the process for listing a species as  
20 endangered?

21 A. For the state?

22 MR. HEAD: Object to the extent it calls for a  
23 legal conclusion. You can answer.

24 A. It's a process. Both state or federal, I mean,  
25 there's two different processes, right? We have federal

1 endangered species and a state endangered. This is a  
2 state endangered animal, and I don't work in the  
3 endangered species section, but I have my experience  
4 working with a lot of endangered species as a federal  
5 biologist, it's a process.

6 Q. (By Ms. Voelekers) Is it fair to say it's a  
7 process that is informed by best available science?

8 A. Oh, definitely. Yes.

9 Q. In your understanding, what protections are  
10 species entitled to once they are listed as endangered?

11 MR. HEAD: Same objection.

12 A. Keep going?

13 Q. (By Ms. Voelekers) Yes, please.

14 MR. HEAD: Yes.

15 A. That really throws me off, but anyway.

16 Q. (By Ms. Voelekers) Do you want me to repeat the  
17 question?

18 A. Yes, please.

19 Q. What protections are species entitled to once  
20 they are listed as endangered?

21 A. Depends. Federal species sometimes come with  
22 certain protections. State species, I'm not sure, but I  
23 don't believe there's a whole lot.

24 Q. How does the listing of a particular species  
25 under state law impact WDFW's work?

1           A. Well, I don't -- it's certainly on the front end  
2 there's a lot of work because it's such a serious issue  
3 to get these animals listed. This takes a long process  
4 so there's a lot of work there. How does it affect our  
5 work in the field? It's -- it's like all hands on deck.  
6 We need to do things and make people aware of potential  
7 impacts to these animals so that they can continue to  
8 persist on the landscape and that their habitats can  
9 also persist on the landscape.

10           So it kind of ups the game a little bit for us  
11 when we say it's endangered, and then to convey -- to  
12 convey, like I've tried to do here today, how important  
13 that is to us as an endangered species, what that really  
14 means, like, we can't have anything there. It's like  
15 100 percent avoid, if we can.

16           **Q. Because the risk if you don't have 100 percent**  
17 **avoidance is that the species does not survive; is that**  
18 **accurate?**

19           A. Yeah. It's -- yeah. We're not willing to take  
20 the risk to say, Well, let's see what it will do. Let's  
21 just kind of do this over here. No. Let's just avoid  
22 right now. But, of course, we have to be reasonable and  
23 things like that. But from a scientific perspective,  
24 avoid.

25           **Q. Does WDFW has a recovery plan for the**

1 **ferruginous hawk?**

2 A. No. This question I think also came up or a  
3 very similar one, we had some discussions with EFSEC a  
4 while ago on this. And that's a component or a process  
5 for a different division over in Olympia, because they  
6 do make recovery-type plans, and I don't -- I mean, the  
7 bird was just listed as endangered last year so I  
8 don't -- I don't -- there is no recovery plan right now,  
9 but I know it was on somebody's radar to kind of move  
10 that forward, but again, that's probably a process too.

11 **Q. Does the listing of a species prompt creation of**  
12 **any additional guidance within WDFW?**

13 A. No. What it -- at least from my perspective, it  
14 tells people to go back and look at the document, it's  
15 called like a status review or the document or documents  
16 that were prepared to propose this creature for up  
17 listing to endangered. It's a huge packet. It has to  
18 go in front of our wildlife commission, and they have to  
19 approve this.

20 So this commission is made up of typically  
21 non-science folks, they might have some science  
22 background, but we need to prepare them documents and  
23 provide presentations to them so that they're educated  
24 just like we are on the importance of listing this bird  
25 as endangered.

1           So there's a ton of science in those I'll call  
2   it a listing packet, you know. And we would -- and it  
3   probably -- I know I'm thinking of a couple other  
4   species that were listed as endangered as well. There's  
5   things in there like a threat section and future  
6   management section and maybe some recommendation kind of  
7   things going forward.

8           So that document, although not called a recovery  
9   plan, it has a road map in it for us to follow to help  
10   these animals I guess maintain an endangered status and  
11   perhaps go away from endangered to something better.

12          **Q. So if anyone, an agency or even WDFW staff, want**  
13   **to understand how to avoid negative impacts to an**  
14   **endangered species, the best guide would be that status**  
15   **update for the species?**

16          A. I would point someone there first, and then I  
17   would also provide them with a name of a person, like  
18   for this one I would say, And also call Watson. If it  
19   was another animal, I'd say, Call this guy or call that  
20   girl, you know?

21          **Q. So then for ferruginous hawk, the best guy for**  
22   **how to avoid additional impacts to that species would be**  
23   **the status update by Jim Watson and his co-author?**

24          A. Yes. And also talking to Watson because I think  
25   in the status update it doesn't include some of Watson's

1 most recent publications, which talk about that core  
2 nesting areas and core home range areas and all that  
3 kind of stuff, right?

4 So again, the best available science at the time  
5 in the status update was there, and then we got this new  
6 science from Jim and others that said, Oh, now we got  
7 some ideas of core areas. So it kind of goes along  
8 together.

9 Q. Okay.

10 A. Yeah.

11 Q. We've only been going for 45 minutes. I don't  
12 know if you want to take a break, though, because it's  
13 noon, or do a little bit more, and then take a break?

14 A. We can do more.

15 Q. Okay.

16 A. Yeah.

17 Q. Have you looked at how the project may have  
18 cumulative impacts with other developments within Benton  
19 County?

20 A. Yes.

21 Q. What have you looked at to assess those  
22 cumulative impacts?

23 A. I first looked at -- when you say with other  
24 developments, can you define "developments"?

25 Q. I'm using the term very broadly.

1 A. Okay.

2 Q. So not necessarily just other energy projects,  
3 but the cumulative impacts of this project on the human  
4 developments that already exist within Benton County.

5 A. Okay. Yeah. So looking at residential  
6 development as the city of I guess Kennewick moves  
7 south, pretty much the entire landscape up there has  
8 already kind of built out for agriculture so we don't  
9 see much more agricultural.

10 The one thing that does change up in the  
11 landscape is the amount of private lands enrolled in the  
12 Conservation Reserve Program. So in other words, it  
13 could be dryland wheat, but if they go conservation  
14 reserve land, it's in grassland. Both offer different  
15 types of habitats and things for animals to enjoy. But,  
16 of course, the Conservation Reserve Program probably has  
17 a little bit higher level of functionality when it comes  
18 to providing wildlife.

19 So look at those. Not only look at the Horse  
20 Heaven Hills project but there's other renewable  
21 projects proposed up there as well. And so another big  
22 one up there is maybe expansion of vineyards or new  
23 vineyards which is in that landscape. So there's a lot  
24 of things that go into the analysis of I guess  
25 cumulative impacts and how it may affect landscape

1 connectivity and the variety of species we've already  
2 talked about up there.

3 Q. So assuming there is no additional development  
4 within Benton County, so just the existing development,  
5 does the addition of the project create concerns for you  
6 and the cumulative impacts of that project with the  
7 existing development?

8 MR. HEAD: Object to form. You can answer.

9 A. In my opinion yes, yes.

10 Q. (By Ms. Voelekers) And why is that?

11 A. Because of its -- its location on the ridge line  
12 where raptors use the uplifts for flying, there's  
13 ferruginous territories, there's connectivity and  
14 connections modeled albeit but maybe real for a lot of  
15 the animals and birds we already talked about. The  
16 reason it isn't farmed, the landscape is -- you know, I  
17 think the project is, aptly described, it's over 85  
18 percent dryland wheat. But this area along the ridge  
19 line is either too steep or the soils are too shallow  
20 and that's why it's not farmed.

21 And in that steepness and in those shallow areas  
22 that aren't farmed and are too steep, we find these  
23 areas of shrub-steppe habitat, we find areas for nesting  
24 for ferruginous hawk, and it's right there in the  
25 project. So even if no other developments happened in

1 Benton County but this one did, there would still be an  
2 impact.

3 Q. Have you looked at the cumulative impact of this  
4 project and other existing renewable energy development  
5 projects in Eastern Washington?

6 A. Yes.

7 Q. What was your assessment of those cumulative  
8 impacts?

9 A. It's -- I mean, there's -- there's over 50 solar  
10 projects and a dozen new wind projects plus 27 or so  
11 existing wind projects in the state. About 85 percent  
12 of those are here in the Columbia Basin. And yeah,  
13 they're spread out, right? So that's like, well, that's  
14 okay. They're not, like, touching each other, all that  
15 kind of stuff. Some of them are in key locations,  
16 really important locations, like this particular  
17 project.

18 Cumulatively solar is probably over 84 square  
19 miles, right? What does that look like? Well, it's  
20 between here and Yakima, a half mile on either side of  
21 the highway is solar, that's 84 square miles of solar,  
22 just for a visual in your mind.

23 So but for us, it's like real estate, location,  
24 location, location. These projects are in spots because  
25 it works good for their sun collection and transmission,

1 but a lot of them occur in sensitive areas, and  
2 cumulatively we lose important habitats, we may lose  
3 important sites for animals to reside or nest at, and  
4 then so geographically we lose landscapes and we lose  
5 populations or populations continue to decline so...

6 Q. To your knowledge, has any state agency  
7 evaluated the cumulative impacts of renewable energy  
8 projects in Washington State?

9 A. Not to my knowledge, no.

10 Q. In your opinion, should there be a cumulative  
11 impact analysis for all proposed renewable energy  
12 development in Eastern Washington?

13 A. I would like to have a discussion with others  
14 about that, but that's kind of a good idea. I'm just  
15 one -- one mind, but I would like to hear what other  
16 minds think about that, you know.

17 Q. But as you sit here today, you would agree it's  
18 a good idea to discuss --

19 A. Oh.

20 MR. MCMAHAN: Ms. Voelekers, Tim McMahan here.  
21 I'm objecting to the form of this question and to any  
22 legal opinion offered by Mr. Ritter in this regard.

23 MS. VOELEKERS: Okay. Dani, I'm going to ask  
24 you to read my last question back so I can make sure  
25 that I'm asking what I meant to ask.

1 (Wherein the reporter read back.)

2 Q. (By Ms. Voelekers) In your opinion, is it a  
3 good idea for there to be a cumulative impact analysis  
4 for all renewable energy projects in Eastern Washington?

5 A. Yeah. I think it's a good idea, yes.

6 Q. What is your understanding of the importance of  
7 shrub-steppe habitat cumulatively?

8 A. A very good understanding of its importance  
9 cumulatively.

10 Q. What is the importance of shrub-steppe habitat?

11 A. Well, No. 1, it's native, it supports a variety  
12 of unique wildlife. Science and literature says we have  
13 lost over 60 percent of shrub-steppe habitat over the  
14 years. And with that loss of habitat becomes loss of  
15 animals and lower wildlife populations. The habitat has  
16 become fragmented, that means it's not connected in  
17 places. It's just bits and pieces here and there. So  
18 when we find areas that are still large shrub-steppe  
19 habitats, we would like to keep those intact. I think  
20 that kind of broadly answers the question.

21 Q. Do even small shrub-steppe habitats have value?

22 A. Yes. Certainly. Certainly. Yes, they do.  
23 Yeah. Again, it's, you know, location, location,  
24 location. Small areas can support unique species. All  
25 species are different. Some are generalists so they can

1 kind of bop around to these mall ones. Like I think  
2 jackrabbits are generalists, you can kind of find them  
3 anywhere. A specialist might be like a ferruginous  
4 hawk, it needs a specific area to nest in. So yes, even  
5 small areas are important, but some may be less  
6 important.

7 **Q. What are the biggest threats today to the**  
8 **continuance of shrub-steppe habitat?**

9 A. Development.

10 **Q. What types of development?**

11 A. Well, urban sprawl and then agriculture. And I  
12 don't -- that's not -- that's not saying it badly.  
13 There's a lot of programs right here. Voluntary  
14 Stewardship Program is trying to address this. Instead  
15 of going to court and battling legally about this, a  
16 state program was created where I guess farmers and  
17 conservationists are at the same table saying, How can  
18 we make sure you can keep farming because that's really  
19 good for the economy and getting people food, but we  
20 also can have conservation? So we're working together  
21 to have that agricultural expansion but also  
22 conservation of shrub-steppe areas.

23 **Q. Does -- this is a broad question.**

24 A. Okay.

25 **Q. But in your opinion, professional opinion, how**

1 much more shrub-steppe habitat can the state of  
2 Washington afford to lose before the species that depend  
3 on it are unable to survive?

4 A. Zero.

5 Q. Your professional opinion is that we cannot  
6 afford to lose any more shrub-steppe habitat?

7 A. I guess that's kind of drastic there saying zero  
8 perhaps. But are there areas we could give up  
9 because -- boy, that's -- no, that's a tough one. I'm  
10 going to say we can't afford really to lose any, but I  
11 think if we went through an evaluation process, we would  
12 find areas that no -- that are so isolated and they're  
13 small that we could lose those because we really want to  
14 fight the battle over there to keep that big continuous  
15 one still connected.

16 So it would be a -- we would have to work  
17 internally and with some external partners and just kind  
18 of go through an evaluation. We've lost so much  
19 already, you know.

20 Q. Is it fair, then, to say that any more loss  
21 truly needs to be fully mitigated for the survival of  
22 the dependent species?

23 A. Well, it's a yes and no. If we -- shrub --  
24 certain shrub-steppe could be small and isolated but it  
25 may support really important animals, seasonally,

1 migrationaly, whatever, right? If we lose that, we  
2 lose the animals. So I -- what was the question? Can  
3 you really quick again? I'm sorry.

4 Q. I -- I don't have that one written down. Let me  
5 ask Dani.

6 (Wherein the reporter read back.)

7 A. Thank you.

8 It's hard to mitigate for something that you  
9 absolutely need. So if we lose it and animals reside  
10 there, they use it seasonally, they use it  
11 migrationaly, and you lose it, making it over here does  
12 not guarantee the animals are going to be there or come  
13 back to it.

14 Q. So would it be fair then to say with minor  
15 exception the species that rely upon shrub-steppe  
16 habitat really cannot afford to lose any more of it?

17 A. That is correct.

18 Q. Can shrub-steppe habitat be created where it  
19 does not currently exist?

20 A. Some would say yes. It's a challenge. It is a  
21 challenge. So where it currently doesn't exist, dryland  
22 wheat fields, right? We've had discussions over the  
23 years with my employment with WDFW on let's make some  
24 more where it used to be, right?

25 Q. Uh-huh.

1           A. But that is the soil profiles have changed over  
2 the years because of all the farming, does it have the  
3 right soils, and then planting it and seeding it and  
4 moisture and mother nature, we're talking time, right?  
5 But could it be? Sure. I've seen areas that have  
6 burned 20 years ago that have had some decent  
7 restoration on it, but it never comes back like it was.

8           Q. I think this is a good spot. I have about an  
9 hour's worth more of questions.

10          A. Okay.

11          Q. But I don't want to ask to power through because  
12 I understand other counsel has questions as well for  
13 this afternoon.

14          A. Okay.

15                MS. VOELEKERS: So I propose that we go off the  
16 record.

17                (A lunch break was held from 12:16 to 1:01 p.m.)

18                MS. VOELEKERS: Go back on the record.

19          Q. (By Ms. Voelekers) I am going to hand you back  
20 what has been marked as Exhibit 3.

21          A. Okay.

22          Q. Do you recognize this document?

23          A. Yes, I do.

24          Q. What is this document?

25          A. It is Appendix L from the Updated EFSEC

1 Application for Site Certification Draft Wildlife and  
2 Habitat Mitigation Plan (New) from February -- I'm  
3 sorry -- revised December of 2022.

4 Q. Have you reviewed this document before today?

5 A. Before today? Yes.

6 Q. Okay.

7 A. And today.

8 Q. Can you please turn to page 5 of Exhibit 3?

9 A. 5, yes.

10 MR. HEAD: Excuse me, counsel, can I just get  
11 clarity? Which exhibit in the ones that you previously  
12 emailed to us, what's the number on this one?

13 MS. VOELEKERS: No. 5.

14 Q. (By Ms. Voelekers) On page 5, there is a table,  
15 Table 1, that includes a history or summary, excuse me,  
16 of Agency Consultation History, do you see that table?

17 A. Uh-huh.

18 Q. On the second line, first bullet point --

19 A. Uh-huh.

20 Q. -- it says that, "WDFW noted setback  
21 recommendations that may be appropriate during  
22 construction during the nesting/fledging season for the  
23 ferruginous hawk nests observed near the Project that  
24 was occupied all three years it was surveyed  
25 (2017-2019)."

1 A. Uh-huh.

2 Q. Is that summary consistent with your  
3 recollection of the January 28, 2020, meeting?

4 A. Yes. To the best of my knowledge.

5 Q. Further down with reference to a January 27,  
6 2021, meeting, the summary states that "WDFW noted that  
7 the Project was well sited given the level of existing  
8 disturbance." Were you at the January 27, 2021,  
9 meeting?

10 A. Yes.

11 Q. Is your recollection of the discussion during  
12 that meeting consistent with this summary?

13 A. Yes.

14 Q. On the next row with regard to a November 2,  
15 2021, meeting, the summary says that "WDFW said wildlife  
16 and habit surveys were done well; no comments." Were  
17 you at the November 2, 2021, meeting?

18 A. Yes.

19 Q. Is that summary consistent with your  
20 recollection?

21 A. Yes.

22 Q. The summary goes on to say that "WDFW reviewed  
23 habitat impact tables and thought they looked good."

24 A. Yes.

25 Q. Is that consistent with your recollection?

1 A. Yes.

2 Q. On page 6 --

3 A. Uh-huh.

4 Q. -- on the column for the November 16, 2021,  
5 meeting, the summary states that "WDFW recommended  
6 avoidance buffers around ferruginous hawk nests during  
7 construction; noted that the agency is working on  
8 updated guidance on how to address ferruginous hawk for  
9 all projects." Were your at the November 16, 2021,  
10 meeting?

11 A. Yes.

12 Q. Is that summary consistent with your  
13 recollection of the meeting?

14 A. Yes.

15 Q. The next bullet point states that "WDFW noted  
16 that pronghorn are not regulated by the agency and  
17 recommended that EFSEC consult with the Yakama Nation  
18 regarding that species, since the heard was reintroduced  
19 by them." Is that summary consistent with your  
20 recollection of the meeting?

21 A. Yes.

22 Q. Was that the first time that you recollect  
23 recommending that EFSEC consult with the Yakama Nation  
24 regarding pronghorn antelope?

25 A. Yes, that seems about right.

1 Q. On the next row with reference to a November 30,  
2 2021, meeting, the summary states that "WDFW agreed with  
3 the mitigation options presented in the draft HMP."  
4 Were you at the November 30, 2021, meeting?

5 A. Yes.

6 Q. Is the statement that "WDFW agreed with the  
7 mitigation options presented in the draft HMP"  
8 consistent with your recollection of the meeting?

9 A. Let me check something here. This -- I --  
10 this -- it talks about options so I don't know what  
11 we're talking about there. So I definitely have to go  
12 back and look at some notes or talk to folks that were  
13 at the meeting because options is pretty broad here.

14 Q. So as you sit here today, you cannot confirm or  
15 deny that this is an accurate summary of the discussion  
16 during the November 30, 2021, meeting?

17 A. Correct, yeah. Uh-huh. Yes.

18 Q. On the next row, in reference to a December 14,  
19 2021, meeting, the summary states that "All agreed to  
20 memorialize approach to minimize impacts to canyons in  
21 the revised HMP." Were you present at the December 14,  
22 2021, meeting?

23 A. Yes.

24 Q. And just for clarity, do you understand HMP to  
25 refer to a Habitat Mitigation Plan?

1 A. Yes.

2 Q. Is the statement on that first bullet point for  
3 December 14, 2021, meeting consistent with your  
4 recollection of the discussion?

5 A. Yeah. My recollection, yes.

6 Q. On page 7 --

7 A. Uh-huh.

8 Q. -- on the final column there's a reference to a  
9 January 20, 2022, meeting. Were you present at that  
10 meeting?

11 A. Yes.

12 Q. The second bullet point says "WDFW confirmed  
13 agreement with mitigation ratios and approaches  
14 presented in draft HMP." Is that summary consistent  
15 with your recollection of the meeting?

16 So before looking through the document, I'm just  
17 asking for your personal recollection of the meeting.

18 A. I remember confirming the mitigation ratios all  
19 along pretty much. But "approaches presented in the  
20 draft HMP." I do not know. Since January 20th, there  
21 had been no revised HMP at that time. So I would like  
22 to look at the February 2021 HMP to see what we agreed  
23 to so I'm...

24 Q. Yeah. So as we sit here today, do you have  
25 enough information to determine whether or not this is

1 an accurate summary of the discussion in January of  
2 2022?

3 A. I don't.

4 Q. Okay. To the extent that there was a discussion  
5 about the draft HMP in January of 2022, is it your  
6 understanding that that would have been based upon a  
7 previous version of the HMP than we have in front of us  
8 today?

9 A. That is my feeling just looking at the dates  
10 here, yes. Yep.

11 Q. So turning to page 11 --

12 A. Uh-huh.

13 Q. -- which is the end of the discussion in section  
14 5 about general -- oh, sorry. Page 10, the section  
15 begins 5.2 Habitat Impacts.

16 A. Yes.

17 Q. And at the end of that section on page 11  
18 there's a statement that says that "Replacement habitat  
19 would be provided such that there would be no cumulative  
20 loss in function or value of habitat from project  
21 development."

22 Based upon your understanding of the proposed  
23 mitigation measures for the project, do you agree with  
24 that statement?

25 A. That's on page 11?

1           **Q. The last sentence on page 11.**

2           A. Hmm. I don't generally agree with that  
3 statement.

4           **Q. And why not?**

5           A. I -- we operate in this arena quite a bit  
6 talking about replacement habitats and whether they  
7 provide the same functions and values. And if it  
8 functions as a nesting area, say, for a sage sparrow,  
9 can you really replace that? And that's kind of where  
10 I'm going at with this. Sometimes it's better to  
11 completely avoid the impact so that you don't have to  
12 try to somehow address this.

13           The keyword here is "habitat," because our wind  
14 power guidelines and much of these discussions are based  
15 on habitat impacts only, right? So just plants for  
16 plants, right? Can we do that? Can we lose an acre of  
17 shrub-steppe there and get an acre through an easement  
18 acquisition or working money and something like that?  
19 Yeah, probably.

20           But then when you throw in the words "function"  
21 and "value," what does the shrub-steppe habitat function  
22 as? Does it function as a breeding site, a nest site,  
23 and then it kind of ups the game a little bit.

24           So it's been kind of a, I don't know, kind of a  
25 pinch point in our mitigation discussions, and we've

1 talked about this internally that I keep saying our  
2 mitigation is really habitat focused. Where do you put  
3 the animals in this, right?

4 And for this particular project, you know, we  
5 have a ferruginous hawk, like, how does that figure in  
6 here, when the guidelines -- which are old, our wind  
7 power guidelines admittedly are old and need to be  
8 updated -- are habitat based.

9 So I think on for a habitat per habitat, you  
10 could probably do it, and that would probably satisfy  
11 it. But when you put this function and value into it,  
12 to me it equates a wildlife function and value. That's  
13 me speaking from my experience, and I don't know that we  
14 can get there.

15 Q. Okay. Thank you.

16 So on page 14 --

17 A. Uh-huh.

18 Q. -- right in the middle of that second paragraph  
19 there's a discussion of a study --

20 A. Uh-huh.

21 Q. -- on bird abundance and diversity at a PV array  
22 facility in South Africa.

23 A. Uh-huh.

24 Q. And seven lines from the bottom, the sentence  
25 that starts "The primary" --

1 A. Yes.

2 Q. Okay. So it says, "The primary conclusion of  
3 the study was that bird diversity and density were  
4 higher outside of the facility, but the facility was not  
5 absent of birds."

6 A. Uh-huh.

7 Q. In your experience, do you expect to see a  
8 decrease in bird activity after installation of PV  
9 arrays consistent with the study's findings here?

10 A. (Reading to self.) This is South Africa, I  
11 don't know what birds are over there, right? I know  
12 what we have here. I think this paper -- I remember  
13 reading this many years ago and it's in my files in the  
14 office -- because at the time when I assembled a big  
15 data catalog or a literature search, we're looking for  
16 documents like this that talked about how things change  
17 when a solar facility goes in, what happens to animals  
18 and plants, and does it go up or down, right? So this  
19 one was particularly interesting.

20 And I don't know. I have gut feelings, I have a  
21 personal opinion, right? But scientifically, I don't  
22 know. The best thing we can do right now is look at the  
23 science, what's out there. And I think we do know that  
24 things will change, we just don't know how.

25 Q. Because there isn't yet a study of the same

1     **topic specific to Washington State?**

2           A. And that's been the rub, right? They say, well  
3     this is South Africa, give us something from the  
4     Columbia Plateau, where we have sage thrashers and all  
5     that kind of stuff, and then we can start talking about  
6     how these things really respond out here to -- or any  
7     kind of development.

8           But for now we have to use these surrogates, if  
9     you will, and just kind of say, Well, over there in  
10    South Africa things went down there but they went up  
11    here. But I'm familiar with some -- I think there's  
12    some work in California and probably somewhere else in  
13    the U.S., probably all over the world now. It just  
14    depends. It's site specific really.

15           **Q. And we don't have the site specific data for**  
16    **Eastern Washington in terms of impacts from PV arrays?**

17           A. That is correct.

18           **Q. On the next page, there are a number of**  
19    **statements referring to mitigation measures. The second**  
20    **bullet says that "The Project will use industry standard**  
21    **best management practices to minimize impacts to**  
22    **vegetation, waters, and wildlife."**

23           A. Uh-huh.

24           **Q. Do you agree with that statement?**

25           A. Yeah. Based on my experience working with

1 renewables in the state now for 15 years, projects  
2 generally do a pretty dang good job of these best  
3 management practices. Sometimes they're spelled out on  
4 a different sheet or something like that to minimize  
5 impacts to those things, they really do.

6 Q. And are industry standard best management  
7 practices consistent with best available science?

8 A. We're talking about installing an industrial  
9 solar facility while also trying to minimize impacts to  
10 sensitive species and wildlife, two very different  
11 lanes. I don't know -- I don't know how their best  
12 management practices to minimize impacts to waters, I  
13 don't know those. I don't know if they're based on  
14 science or not. I'm guessing they are.

15 Q. Four bullets down there's a sentence that says  
16 "During construction" --

17 A. Yes.

18 Q. The sentence reads, "During construction, WDFW  
19 recommended seasonal buffers (per Larsen et al. 2004)  
20 for ferruginous hawk nests would be observed to avoid  
21 disturbing nesting ferruginous hawks." Do you agree  
22 with that statement?

23 A. At the time we made the recommendation, yes.

24 Q. Do you have concerns about the applicant  
25 observing seasonal buffers recommended in 2004?

1           A. Yes. 2004, not sure the document, Larsen  
2 Ferruginous Hawk Update or something perhaps. Let me  
3 just look here. Larsen. L, Larsen. Yep. Management  
4 Recommendations for Washington's Priority Species.  
5 Well, that's 2004. The document was updated in 2020 and  
6 probably further slightly updated maybe for other  
7 animals that have gone through a status review and now  
8 we have the uplisting documents for the ferruginous hawk  
9 that were prepared in 2021 or 2020.

10           Seasonal buffers are fairly common for raptors  
11 in general for construction sites. I think if there  
12 were ferruginous hawks there and seasonal buffers were  
13 put in, that would be a good thing. But on this one, I  
14 would like to loop back with Jim and Jason to see if  
15 those buffers that we had from Larsen 2020 -- or 2004  
16 are still applicable today given the status of the bird.

17           Q. The next bullet down halfway through there's a  
18 sentence that starts with "If impacts," do you see that?

19           A. Uh-huh.

20           Q. It says, "If impacts to potentially suitable  
21 habitat cannot be avoided during final design, the  
22 Applicant will consult with WDFW regarding the need for  
23 burrowing owl surveys prior to construction, including  
24 surveys to determine habitat suitability for burrowing  
25 owls and surveys for breeding owls if suitable habitat

1 is present." Do you know how EFSEC will determine if  
2 surveys will be required?

3 A. To me, when I read this -- and not just today at  
4 lunch when I read it but other times when I've seen  
5 similar statements -- to me, it's almost a standard  
6 practice for projects in general. Even maybe some  
7 residential and larger projects. Before the  
8 construction starts within, like, almost a two-week  
9 window, they'll have someone go out in front of where  
10 the disturbance is going to occur, right?

11 They've done all these surveys in the past,  
12 we've got no birds, we've got no birds, or whatever.  
13 Okay. Let's just make sure. A couple weeks before send  
14 some qualified folks out through the landscape. Is it  
15 still zeros? Now we have current data. But if  
16 something is found, then we have to adjust the  
17 construction schedule or move the project or something  
18 or discuss further mitigation.

19 So this is a -- I don't see it as a red flag.  
20 It's just something that's kind of done. You know, if  
21 there's a sensitive area, we say, Can you give it just  
22 one last look just to make sure?

23 Q. Okay. So the sentence starts off by saying "If  
24 impacts of potentially suitable habitat cannot be  
25 avoided..."

1 A. Uh-huh.

2 Q. Do you know how EFSEC determines if that will  
3 trigger this following provision about the con -- about  
4 conducting surveys?

5 A. No. First of all, we have to decide what's  
6 potentially suitable habitat, right?

7 Q. Is that your opinion?

8 A. I mean, yeah. Yeah. That's -- yeah. The  
9 project may say, We think this is suitable, do you think  
10 we should survey? And we may do a quick site visit,  
11 talk to them on the phone, and say, No, you don't need  
12 to do it. We don't agree. Never had owls up there,  
13 it's not right for them, it's got this and that, and  
14 owls are never in those areas. So we could, you know.

15 But this -- these statements or I guess things  
16 like this falls on the responsibility of the project at  
17 times. If they think -- I mean, their job is to avoid  
18 and minimize. If they think they are going to impact  
19 and not avoid, then they should do due diligence to make  
20 sure that they can check the box that everything's good.  
21 So we have to determine if they're suitable habitat.  
22 That's the No. 1 thing.

23 Q. So this would be a continuance of the  
24 collaborative discussions that you outlined earlier  
25 today where there might be discussions between WDFW,

1 EFSEC, and the applicant?

2 A. Certainly. Yes. Yes.

3 Q. The end of the bottom of page 15.

4 A. Uh-huh.

5 Q. The last sentence reads, "The Applicant does not  
6 plan to pursue an eagle take permit for the anticipated  
7 Phase 1 of the Project but will re-evaluate eagle risk  
8 and whether there is a need for an eagle take permit for  
9 the anticipated Phase 2 of the Project."

10 A. Uh-huh.

11 Q. Based upon available information, do you believe  
12 that it is likely that there may be a taking of a eagle?

13 A. Likely taking.

14 MR. MCMAHAN: Ms. Voelekers, Tim McMahan here.  
15 I'm objecting to the speculative nature of this  
16 question. And secondly, this relates to a U.S. Fish and  
17 Wildlife Service process, not a WDFW process.

18 Q. (By Ms. Voelekers) You can answer.

19 A. I think it's good practice where there's these  
20 birds around for a project to acquire a permit, whether  
21 a bird gets -- encounters a turbine is unknown.

22 Q. On the next page, page 16.

23 A. Uh-huh.

24 Q. The last bullet before section 7.2, it says that  
25 "The Applicant will conduct 2 years of standardized

1 post-construction fatality monitoring to assess impacts  
2 of Turbine operation on birds and bats." Are you aware  
3 of the scope of that monitoring?

4 A. I know that these -- monitoring is typically  
5 done on projects, as for -- and what is involved in  
6 doing them. But when you have a site that is so large,  
7 244 turbines, and all that kind of stuff over 20-plus  
8 miles, the consultants typically work up a survey  
9 methodology. In other words, they're not going to  
10 survey every turbine for fatalities, that's a lot of  
11 work, but they'll figure out some process where they can  
12 get the required amount of data to make an assessment of  
13 fatalities on the site. So this is -- this is good.  
14 But the details get worked out.

15 Q. The details are still being worked out with  
16 regard to this project?

17 A. The project specifics, like how -- how often are  
18 you going to monitor, what turbines are you going to  
19 monitor, that kind of stuff. And it might be in the --  
20 I don't think it's -- anyway.

21 Q. Page 16, still the second bullet, it says "In  
22 accordance with project-specific guidance provided by  
23 WDFW, Turbines nearest to Nest 03 were repositioned to  
24 be more than .5 mile away from the nest, which exceeded  
25 the .25 mile setback recommendation (M. Ritter, personal

1 communication)."

2 A. Uh-huh.

3 Q. What project-specific guidance is this referring  
4 to, if you know?

5 A. Project specific, I do not know.

6 Q. What personal communications is this referring  
7 to, if you know?

8 A. I do not know.

9 Q. Is the .5 mile setback from Nest 3 consistent  
10 with best available science?

11 A. It may be. I would have to go back. It might  
12 be in Larsen 2004. I don't -- yeah. It might be in  
13 Larsen 2004.

14 Q. But as you sit here, you cannot confirm or deny?

15 A. Correct.

16 Q. Page 17.

17 A. Yes.

18 Q. Under 7.4.1, the last sentence of the first  
19 paragraph for that section. It says, "The habitat  
20 mitigation ratios were developed for modified habitat,  
21 through coordination with EFSEC and WDFW, in the absence  
22 of solar development guidelines and considering that  
23 revegetated habitat under solar arrays does not meet the  
24 definition of temporary or permanent impacts from WDFW  
25 (2009)." Do you agree with that statement?

1 A. Yes.

2 Q. Does application of impact mitigation ratios  
3 from wind farm guidance to solar development result in  
4 accurate quantification and type of impacted acreage?

5 A. It's generally similar. I think we kind of  
6 discussed that a bit earlier today.

7 Q. On page 18 --

8 A. Yes.

9 Q. -- there's a table that identifies habitat types  
10 and just based upon your recollection today, do you  
11 agree with the quantification of modified habitat in  
12 Table 4?

13 A. Yes.

14 Q. Okay. On page 19, under 7.4.2, Criteria 2, it  
15 first says that "Mitigation will address the relative  
16 impact that the Project may have on ferruginous hawk  
17 nesting and foraging habitat." Do you agree with that  
18 statement?

19 A. Relative impact -- in reading it, I've read it  
20 several times, that sentence, I don't know exactly what  
21 it's saying. It's just, I don't. "Relative impact the  
22 Project may have on ferruginous hawk..." All right.  
23 Well, let's see if the mitigation will address it. May  
24 have on ferruginous hawk nesting, may have is pretty  
25 wide open, may not have. Relative impact, relative to

1 what? I mean, there's a lot going on here. I think the  
2 rest of the writing in that paragraph says a lot more.

3 Q. So the next sentence says that "Removal of  
4 foraging habitat within core use areas (3.2 kilometers/2  
5 miles) and home ranges (10 kilometers/6.2 miles) of  
6 occupied ferruginous hawk nests will be addressed by  
7 completing mitigation similarly within a core use area  
8 or home range on an occupied nest."

9 A. Uh-huh.

10 Q. Do you agree with that statement?

11 A. No.

12 Q. And why not?

13 A. It uses the word "occupied," and all along the  
14 Washington Department of Fish and Wildlife have said  
15 nesting territories -- all nesting territories in that  
16 area need to have protection.

17 So occupied only refers -- occupied refers back  
18 to the studies done by the project where they only had  
19 two, maybe three occupied nests the entire time, and  
20 we've been monitoring and watching birds in that  
21 landscape for two to three decades. And we have 16 or  
22 17 nesting areas that need protection and management.

23 Q. On pages 20 and 21 --

24 A. Yes.

25 Q. -- three different options are discussed for

1 mitigation. Conservation easement, payment to WDFW, or  
2 payment to local conservation entity. Do you know how  
3 and who will -- sorry.

4 Do you know who will determine which option is  
5 ultimately chosen?

6 A. No. It kind of works like this: The project  
7 may say to us, Do you have any areas around the  
8 project -- because our mitigation sequencing says, of  
9 course, avoid, minimize, mitigate, but it also says on  
10 site/in kind is preferred, right? And then we kind of  
11 move to out of kind/off site as the last in there.

12 So like to look for somebody nearby. We might  
13 say to the project since they have a relationship with  
14 some of the landowners up there, Do you know if any of  
15 the landowners have some land they would like to put an  
16 easement? In fact, we would be interested in this area  
17 over here has an easement, can you go talk to them? So  
18 it's kind of a lot of back and forth here.

19 And we might working -- you know, EFSEC might be  
20 part of these calls, and we kind of like brainstorm some  
21 ideas, we might settle on one. And the project might  
22 say, you know, in the end of the day, we're just going  
23 to go with the fee thing because it's simpler for us.  
24 We just want to go build a project. We want to check  
25 the box on mitigation payment, we can move on.

1           So we really kind of leave it up to the project  
2 a little bit to see, you know, where they want to go  
3 with it on one of these options.

4           **Q. Is it your understanding that the applicant will**  
5 **ultimately determine which option to go with?**

6           A. No. I don't think the applicant would. I think  
7 it's almost a joint decision. We might make a  
8 recommendation to EFSEC that we would prefer to say this  
9 option over that one, and the applicant may say  
10 something else, you know, we would have to have another  
11 discussion, but no.

12           **Q. Are you aware of any conversations with the**  
13 **Umatilla Tribe regarding mitigation option 3 on page 21?**

14           A. With Umatilla, no.

15           **Q. Are you aware of any conversations with the Nez**  
16 **Perce Tribe regarding option 3 on page 21?**

17           A. No, that -- no. No, I'm not. That -- I'm  
18 sorry, that just kind of surprised me. Reading that and  
19 then hearing it. Actually, I read it many times but  
20 hearing it sounds different. No. No.

21           **Q. You're not aware of any conversations?**

22           A. No. I'm aware of the other stuff, the other  
23 groups that are listed, you know.

24           **Q. So you're also not aware of any conversations**  
25 **with the Wanapum Tribe about option No. 3?**

1           A. I don't recall. I recall perhaps even talking  
2 to the project about these other groups, like Tapteal,  
3 that's a good one in there. Nowadays we would also toss  
4 in the Conservation District. And I thought they  
5 already made a -- I thought -- well, anyway. That  
6 wasn't the question. Yeah. No, I'm not aware. No.

7           **Q. Are you aware of any agreements that have been**  
8 **entered into with any entity about option No. 3?**

9           A. Oh, man. Am I aware of any agreements that the  
10 project has related to No. 3? Yes.

11          **Q. What are those agreements?**

12          A. I don't know if it's an agreement, but I think  
13 you're talking option 3 says Mitigation Payment to Local  
14 Conservation Entity, right? Can I have a minute to talk  
15 to Randy.

16          **Q. Yep.**

17           THE WITNESS: Randy, I'm going to call you,  
18 okay?

19           MR. HEAD: All right.

20           THE WITNESS: I've got to get my phone.

21                           (A short recess was had.)

22           MS. VOELEKERS: Okay. We're back on the record.

23          **Q. (By Ms. Voelekers) If you need to call Randy**  
24 **again, I'll just ask you to answer the outstanding**  
25 **question so we can close that loop.**

1 A. Yes.

2 MS. VOELEKERS: If the court reporter could  
3 please read off the last question to Mr. Ritter.

4 (Wherein the reporter read back.)

5 MS. VOELEKERS: And can you read the one before  
6 that, please?

7 (Wherein the reporter read back.)

8 A. Yes.

9 Q. (By Ms. Voelekers) What are those agreements?

10 A. I don't know that it's an agreement, but I do  
11 recollect that the project was considering making  
12 payment to a local conservation organization which may  
13 or may not have been related to mitigation.

14 Q. What was that organization?

15 A. Friends of Badger.

16 Q. That contribution is addressed on page 24. Are  
17 you aware of any other contributions made to date by the  
18 applicant?

19 A. No.

20 Q. Any donations made by the applicant?

21 A. No.

22 Q. Specific to this project, right?

23 A. Right. I know. Thank you.

24 Q. On page 26 --

25 A. Uh-huh.

1 Q. -- the last two sentences of that section --

2 A. Uh-huh.

3 Q. -- of that page, section 9, "In all cases, the  
4 Applicant may choose to use, for comparison, an agreed  
5 upon reference site to establish what is ecologically  
6 possible in the region." Do you know who all has agreed  
7 to the, quote, agreed upon reference sites, end quote?

8 A. In the past, it's been a group effort to agree  
9 upon those. I was peripherally involved in one for the  
10 Kittitas Valley solar -- I'm sorry, wind project, where  
11 we needed a reference site. And I remember folks that  
12 were involved, like the project, their consultant, us, I  
13 can't remember who else it was, but we would say, Let's  
14 use that one over there, let's talk to Smith over there  
15 on his property, that's a good reference site. So we  
16 kind of just brainstormed on sites, we would do that  
17 together I guess is the answer.

18 Q. Do you know if the applicant must obtain WDFW's  
19 agreements specifically on what an appropriate reference  
20 site would be?

21 A. I don't think they would have to get ours.

22 Q. Do you have any concern that the use of a  
23 reference site at a future date might allow the  
24 applicant to shift the biological baseline for measuring  
25 mitigation success?

1           A. No, I don't. I think the reference site  
2 approach is a good approach whether it's in shrub-steppe  
3 or in the forest. You find a site that's been there for  
4 a long time, it's established, it's functioning as a  
5 forest or a shrub-steppe habitat, and I don't think it  
6 shifts anything. It lets us know what's really possible  
7 out there.

8           On paper we might want to say we want, oh, it  
9 should be 80 percent shrubs and 20 percent native  
10 grasses, right? Well, that would look beautiful, you  
11 know, in 50 years. That would be awesome. Let's go out  
12 and look at the region right now and look at a site  
13 that's been around for 40 or 50 years. Is that -- what  
14 is really possible, right? It's always going to have a  
15 component of cheatgrass in it, it's going to have this  
16 in it.

17           So it's good because then we all have something  
18 to point to and say, no, that's our success criteria,  
19 not this 80 percent on a piece of paper. We want it to  
20 look like that. We could quantify that, but reference  
21 sites are great.

22           **Q. That's all I have for Exhibit 3. Can I have**  
23 **that back?**

24           (Exhibit No. 4 marked for identification.)

25           **Q. I'm handing you what has been marked as Exhibit**

1 4. Do you recognize this document?

2 A. Yes, I do.

3 Q. What is this document?

4 A. It is a memo from Tetra Tech to Dave Kobus,  
5 Scott Renewable Energy. It's from Tetra Tech and West  
6 cc'd to Tim McMahan. And it's the Application of Novel  
7 Ferruginous Hawk Data and Recommendations for the Horse  
8 Heaven Clean Energy Center for Benton County,  
9 Washington. I believe this might be in response to our  
10 recommendations for 3.2 kilometer exclusion in core  
11 nesting areas -- core nesting territories. Yeah. Yep.

12 Q. Beginning halfway through the third line, where  
13 you see "the Project has been developed," do you see  
14 that?

15 A. Third line?

16 MR. HEAD: I'm sorry to interrupt. I thought  
17 you said this is Exhibit 4, and I'm looking at a  
18 Periodic Status Review for Ferruginous Hawk.

19 MS. VOELEKERS: Yeah. Sorry. We got out of  
20 order here. So it would have been 3 on the email.

21 MR. HEAD: Okay.

22 MS. VOELEKERS: I think.

23 MR. HEAD: Thank you.

24 A. Okay. Which --

25 Q. (By Ms. Voelekers) So we're in the first

1 paragraph, the third line.

2 A. Uh-huh.

3 Q. It says "the Project has been developed to  
4 avoid, minimize, or mitigate potential affects to avian  
5 species..." Do you agree with that statement?

6 A. I mean, no. Not entirely.

7 Q. And why not?

8 A. Because the avoid and minimize does not meet our  
9 level of avoid and minimize to avoid and minimize  
10 potential impacts to ferruginous hawk.

11 MR. MCMAHAN: I'm objecting to the form of this  
12 question. Specifically this is talking about "Project  
13 has been developed to avoid, minimize, or mitigate  
14 potential effects to avian species," continuing on, this  
15 is the part that you did not reference, Ms. Voelekers,  
16 "consistent with the U.S. Fish and Wildlife," et cetera.  
17 So I would just like the context to be clear.

18 MS. VOELEKERS: Okay. If we could keep talking  
19 objections to a minimum, I would appreciate it. I'll  
20 ask the question another way, though.

21 Q. (By Ms. Voelekers) As you sit here today, do  
22 you -- would you agree with a statement that the project  
23 has been developed to avoid, minimize, or mitigate  
24 potential affects to avian species?

25 A. Based on your rephrasing of the question and I

1 guess the information shared in the objection, I would  
2 like to read the Washington Administrative Code first to  
3 see what it says about avoid and minimize.

4 Q. Okay. So putting down the exhibit for a minute.

5 A. Uh-huh.

6 Q. Would you agree with the statement that the  
7 project has been developed to avoid potential effects to  
8 avian species?

9 A. No.

10 Q. And why not?

11 A. Because the project as depicted right now still  
12 has turbines within the 3.2-mile core nesting areas for  
13 ferruginous hawk.

14 Q. You would you agree with the statement that the  
15 project has been developed to minimize effects to avian  
16 species?

17 A. To some avian species, yes.

18 Q. Which ones?

19 A. I'm going to be broad here. Raptors other than  
20 ferruginous hawk and likely some of the sagebrush song  
21 birds, because they avoided some of the -- they moved  
22 the power lines that were going across canyons which can  
23 help with just disturbance and destruction and things  
24 like that.

25 So they have done things in their plan, in their

1 project siting, that has been in response to our  
2 recommendations for minimizing some impacts. The one  
3 sticking point we have right now is the ferruginous  
4 hawk.

5 Q. Because they have declined to minimize potential  
6 impacts to the ferruginous hawk?

7 A. To avoid and minimize, yes.

8 Q. To avoid and minimize. The project applicant  
9 has declined to avoid or minimize potential impacts and  
10 effects to the ferruginous hawk?

11 A. The project has declined to avoid -- did you say  
12 the word "declined"?

13 Q. Yes.

14 A. Uh-huh.

15 Q. The applicant has declined to avoid potential  
16 effects to ferruginous hawks.

17 A. Well, no, I don't think there's been -- it's not  
18 an active decline here. They presented a project three  
19 years ago that said, Here's the project layout. And  
20 they have stuck with it. They haven't said -- well, I  
21 guess reading through these documents, they've kind of  
22 said no to our recommendations but not -- well, yes,  
23 they did. They responded to it in a draft EIS. So  
24 declined. Yes, declined to avoid.

25 Q. Also on page 1 of Exhibit 4, at the end of the

1 second paragraph, the author states that, quote, "At no  
2 time during this multi-year coordination effort did WDFW  
3 suggest that alternative analyses or buffers, other than  
4 those described by Larsen et al. (2004), be used to  
5 minimize effects to ferruginous hawk or their habitats."  
6 Do you agree with that statement?

7 A. May I see Exhibit 1 or 2 again or was it 3? The  
8 one that had the meeting history, because it says in  
9 there about the buffers we talked about. So the  
10 statement here "at no time," I would say that's  
11 incorrect.

12 Q. And this memo was -- is dated January 20, 2022.

13 A. Correct.

14 Q. So as of January 20, 2022, is your recollection  
15 consistent with the statement that at no time did WDFW  
16 suggest that alternative analysis or buffers other than  
17 those described by Larsen, et al., be used to minimize  
18 effects to ferruginous hawk or their habitats?

19 A. No, this is not correct, based on my  
20 recollection.

21 Q. Okay. On the second sentence of the last  
22 paragraph on page 1 it states, quote, "On December 14,  
23 2021, Mike Ritter (WDFW) mentioned a potential  
24 restrictive area surrounding active ferruginous hawk  
25 nests (5 and 10 kilometer radius) that may need to be

1 implemented to protect the species based on recent  
2 agency research." Do you agree with that statement?

3 A. Yes. That's the information I was just  
4 referring to.

5 Q. Is it fair to say that the buffers recommended  
6 by WDFW are more protective than the buffers currently  
7 proposed in Scout's application for site certification?

8 A. We -- let's define Scout buffer and WDFW buffer.  
9 To me, that's really important here. Our buffer is  
10 around a nesting territory, no turbines, and, of course,  
11 we conceded a little bit and said if turbines are in  
12 there, you should curtail them at times, if needed.

13 Their buffers are construction buffers, which  
14 means if there is an active nest, they would pull  
15 back -- what was it? -- .5 miles and not have any  
16 disturbance. But if there were no birds or if it was  
17 not nesting season or whatever, construction could  
18 happen right up as close as they needed to. So we're  
19 talking two different buffers here so...

20 Q. Are the construction buffers that the applicant  
21 is proposing consistent with WDFW's best available  
22 science?

23 A. And I answered this earlier, where I said I  
24 believe it came from Larsen 2004, but specifically to  
25 ferruginous hawks, I would like to go back and regroup

1 or visit with Watson and Fidorra to say, Has that buffer  
2 changed or is ferruginous just in the raptor group and  
3 we have this far of a construction buffer?

4 But yes, they are based on best science. I just  
5 don't know what they are right now.

6 Q. You don't know as you sit here today?

7 A. No.

8 Q. As of today, has WDFW issued formal guidance  
9 regarding the appropriate setbacks for ferruginous hawk  
10 nests?

11 A. The -- yeah, it's in our PHS for the setbacks  
12 for construction buffers and timing and disturbances,  
13 that's in our PHS for -- I don't know if that's -- yeah,  
14 I think that gets your answer.

15 Q. This memo is generally responding to requests  
16 made by WDFW for restrictive areas around core use areas  
17 of the hawk. Were the recommendations that you made  
18 around setbacks for core use areas based upon the best  
19 available science?

20 A. Yes.

21 Q. Even if it was not based upon formal guidance  
22 documents published by WD FW?

23 A. Correct.

24 MS. VOELEKERS: Okay. We can move on from that.

25 So the next exhibit number I believe is 5. This was

1 marked as Exhibit 6 in the email this morning, Randy.

2 This is a June 10, 2021, letter.

3 (Exhibit No. 5 marked for identification.)

4 Q. Do you recognize this document?

5 A. Yeah. Hmm. Yes, I do.

6 Q. How do you recognize this?

7 A. Well, let's see. I signed it there as the area  
8 habitat biologist statewide technical lead and provided  
9 it to EFSEC in 2021.

10 Q. And you were the author of this document?

11 A. Yes.

12 Q. Thank you.

13 (Exhibit No. 6 marked for identification.)

14 MS. VOELEKERS: I've marked another letter as  
15 Exhibit 6, which is 7 in the email, Randy.

16 Q. Do you recognize Exhibit 6?

17 A. Yes. I wrote this with Jim Watson and Jason  
18 Fidorra, yep.

19 Q. You were the co-author of this document?

20 A. I am the -- well, I signed it, I coordinated  
21 working with those guys and stuff, but I'm sure I threw  
22 some bones on this and they added the right words and  
23 maybe some new points. But yeah, I wrote it. It's our  
24 agency response.

25 (Exhibit No. 7 marked for identification.)

1           Q. The next letter which we're marking as Exhibit  
2 7, it was included on the email this morning under 8, do  
3 you recognize this document?

4           A. Yes, this looks -- this looks like our original  
5 comment on the project from March 31, 2021. At the  
6 time, I was a statewide technical lead, so yes, I  
7 recognize this.

8           Q. Were you the author of this document?

9           A. Yes, I was.

10          Q. This is a final copy of the letter that you  
11 submitted to EFSEC on March 31, 2021?

12          A. Yes.

13          Q. Okay. Have you ever been on a site visit to the  
14 project area?

15          A. Yes.

16          Q. What was the purpose of -- how many site visits  
17 have you been to the project area?

18          A. I remember -- recall two with the group, you  
19 know, EFSEC and the consultants. I've been up there by  
20 myself on public roads looking at various aspects of the  
21 project, oh, gosh, at least ten times.

22          Q. Have you ever visited the site with any members  
23 of the Yakama Nation?

24          A. I don't believe so. I don't believe they were  
25 part of any of that, no.

1           **Q. For the two meetings that involved the applicant**  
2           **and EFSEC and/or the applicant's consultant, when did**  
3           **those meetings happen?**

4           A. I was still hung up on your previous question,  
5           and I would like to change my answer to yes, the Yakama  
6           Nation was present for some of my solo meetings up  
7           there. Also Conservation Northwest was with us. And we  
8           met over by White Swan. We were discussing pronghorn  
9           issues along all that landscape, and we -- Conservation  
10          Northwest was -- I don't know. We were working on some  
11          projects and stuff, so it was the people in the game  
12          program with the Yakama Nation, the range specialist and  
13          stuff like that.

14          And we ended up over in the western edge of the  
15          project, because the western edge is where pronghorn  
16          sometimes travel to in the winter months. And we got up  
17          on that landscape and just kind of looked across it all,  
18          you know, and said, What could we do up here different  
19          for pronghorn, is there anything we can do up here?  
20          And, oh, you know, this is where the Horse Heaven Hills  
21          project is, so Yakama Nation was there.

22          **Q. Okay.**

23          A. Now onto your next question or -- which I  
24          remember.

25          **Q. For the meeting with Conservation Northwest and**

1 Yakama Nation, was the purpose of the meeting to discuss  
2 the pronghorn population generally or was it specific to  
3 the project's impacts on the pronghorn antelope?

4 A. It was just pronghorn use of the landscape. And  
5 part of that was looking at -- because they have radios  
6 on some of the antelope so they can kind of know where  
7 they go, and they wanted to see the western edge -- or I  
8 guess, yeah, the far eastern movement of the pronghorn  
9 equals the western edge of the project so that's where  
10 we ended up.

11 Q. And is it your understanding based upon all the  
12 information available to you that the pronghorn antelope  
13 do occupy the western portion of the project area at  
14 certain times of year?

15 A. Yes.

16 Q. So the site visit --

17 A. Uh-huh.

18 Q. -- that you attended that involved EFSEC --

19 A. Uh-huh.

20 Q. -- and the applicant, when were those site  
21 visits?

22 A. I don't recall. I would have to go look at my  
23 notes. I really -- but it's been in the last, you know,  
24 two and a half years.

25 Q. Do you remember -- do you recall who all was

1     **there?**

2           A. I know Dave was there, Erik Jansen, several  
3 other people from EFSEC. I would have to go look at my  
4 notes but...

5           Q. Do you recall whether or not members of the  
6 council participated in these site visits?

7           A. Oh, no. No. You mean like the voting council?

8           Q. Yes.

9           A. No. Or do you mean --

10          Q. You have not attended a site visit that involved  
11 the council members?

12          A. EFSEC council?

13          Q. EFSEC council members.

14          A. Oh, no. No. I'm insulated from them. I have  
15 to be.

16          Q. So the council -- no council members have had an  
17 opportunity to ask you questions about the project's  
18 impact on habitat or wildlife?

19          A. Oh, no. No.

20          Q. In your opinion, what information is most  
21 critical for EFSEC council to consider when evaluating  
22 the impacts of the project as it is currently designed?

23          A. I think it's -- and I'm drawing on this not just  
24 from the project but from other ones across the Columbia  
25 Plateau, that the council is ultimately going to decide

1 on -- and it's to have a -- the best information would  
2 be a better understanding of the landscapes in which  
3 these projects occur so the connectivity and the core  
4 areas and the linkages and where unique and sensitive  
5 wildlife populations occur and use, some of that  
6 information is sensitive and we can't release it as an  
7 agency, but knowing that they occur on the landscape, I  
8 think we could.

9 But anyway, that kind of information, and I  
10 think that information should be presented to the  
11 council in a presentation, in a meeting, because  
12 sometimes reading it off pieces of paper and documents  
13 can get -- I don't know. It's hard sometimes to  
14 understand.

15 **Q. And do you think that presentation should come**  
16 **from WDFW?**

17 **A.** I think it should be -- I think EFSEC should  
18 lead it and the project should be there and WDFW should  
19 be there and we would -- we wouldn't be adversarial. We  
20 would present what we know about our subjects in the  
21 best way we can. I think -- you know. I think that  
22 would be really good but...

23 And that's not saying that EFSEC doesn't or the  
24 council doesn't try to find that information, you know,  
25 on their own, but I think -- and maybe some of the

1 members do because they really want to make a really,  
2 really informed decision and really get into it. But I  
3 think just giving it to them saying, Here's the  
4 websites, here's the information, you know, if you  
5 really want to get into it and know these things better.

6 Q. As it is currently proposed, is it your  
7 professional opinion that the project will preserve and  
8 protect the quality of the environment?

9 A. No. No.

10 Q. Why not?

11 A. Because it doesn't avoid ferruginous hawk core  
12 nesting areas.

13 Q. As it is currently proposed, is it your  
14 professional opinion that the project will enhance the  
15 public's opportunity to enjoy the aesthetic and  
16 recreational benefits of air, water, and land resources?

17 A. No.

18 Q. And why not?

19 A. Well, for one -- granted, almost all of this is  
20 private land so there's really little public access that  
21 occurs. So I don't -- I don't know that there'd be a  
22 huge impact on recreational, you know, enjoyment of the  
23 area. There could be a loss of feel free to hunt areas,  
24 hunt by written permission areas. There's a loss of  
25 view shed so I think that's where the quality diminishes

1 it in my opinion.

2 Q. As it is currently proposed, is it your  
3 professional opinion that the project will result in  
4 beneficial changes in the environment?

5 MR. MCMAHAN: Ms. Voelekers, I'm going to object  
6 to the form of this question and the prior question as  
7 well, which is essentially quoting from SEPA.

8 Q. (By Ms. Voelekers) Go ahead. Would you like me  
9 to repeat it?

10 A. Yes, please.

11 Q. As it is currently proposed, is it your  
12 professional opinion that the project will result in  
13 beneficial changes in the environment?

14 A. I don't know what is meant by "environment." If  
15 it means the local area, if it means the environment of  
16 Washington State, or the environment of Earth. So  
17 renewable energy is good for the Earth, you know, at  
18 this point. Professional opinion, based on the  
19 discussions we've had internally and the comments that  
20 the agency has made for this project, it is not good for  
21 the local environment.

22 Q. As it is currently proposed, is it your  
23 professional opinion that the project will promote  
24 environmental justice for overburdened communities?

25 A. I don't have enough information to make that

1 call.

2 MS. VOELEKERS: Okay. I'm going to reserve a  
3 half hour for additional questions. We did take a brief  
4 break there in the middle.

5 THE WITNESS: Yep.

6 MS. VOELEKERS: If we could go off the record, I  
7 would still like to take a brief break now.

8 (A short recess was had.)

9 MS. VOELEKERS: We can go back on the record.

10

11

EXAMINATION

12 BY MR. MCMAHAN:

13 Q. All right. Mr. Ritter, good to see you. Tim  
14 McMahan here. We've known each other on and off over  
15 the years. I appreciate your willingness to sit through  
16 this what must be a marvelous experience today for you.  
17 So I always appreciate your help and participation in  
18 these processes.

19 As you know, I'm a lawyer with Stoel Rives Law  
20 Firm and I am lead permitting counsel for the Horse  
21 Heaven Project, and again, we've been, you know, we've  
22 been meeting with each other on and off over the years.

23 First of all, can you describe your role to  
24 EFSEC in advisement, I believe, as contractor to EFSEC?  
25 Can you describe what that role is for us?

1           A. Yes. We have a -- Washington Department of Fish  
2 and Wildlife has a contract with EFSEC for a variety of  
3 energy-related projects. Most are solar and wind, but  
4 there's a couple other ones on there too. And so  
5 there's a statement of tasks in there for each of these  
6 projects and related to the Horse Heaven Hills.

7           It runs the gamut from reviewing documents,  
8 providing comments on application materials,  
9 participating in meetings, all kinds of stuff. And so  
10 my role is advisory, representing fish and wildlife  
11 resources, and making recommendations to them for -- for  
12 the project.

13          **Q. Thanks.**

14           And you're, of course, aware that EFSEC staff  
15 has also hired independent consultants or contractors  
16 that also work on these projects?

17          A. Yes.

18          **Q. And what is your role and relationship like with**  
19 **respect to those consultants?**

20          A. It's the same. As I just --

21          **Q. Yeah. So what is your interaction with them**  
22 **maybe to better frame that?**

23          A. It's EFSEC is always present, and I believe for  
24 the Horse Heaven it's been all, you know, online virtual  
25 because a lot of these meetings happened during the

1 pan -- the COVID shutdown. And there's, you know,  
2 there's agendas to the meetings so I know what we're  
3 going to talk about, what are the issues. EFSEC kind of  
4 facilitates, asks more questions. So it's -- it's, you  
5 know, a collaborative interchange of information back  
6 and forth working on issues.

7 Q. Okay. But specifically, are you involved with  
8 EFSEC's contractor, which I think is Golder presently,  
9 although they may have changed their name recently?

10 A. WSP now or --

11 Q. Thank you. Yes.

12 A. Yes. I mean, yes. In those meetings, yes.  
13 Yes.

14 Q. Okay. And as part of the -- you are part -- I  
15 guess I would just summarize you are part of the review  
16 process, but you are not responsible for making the  
17 decisions, correct?

18 A. I'm -- correct. That's EFSEC.

19 Q. Yeah. Okay. Do you and have you supplied any  
20 biological or other reports to EFSEC?

21 A. Biological reports?

22 Q. Like consultant reports, evaluations of a kind  
23 that, for example, West provides?

24 A. No, sir.

25 Q. All right. And what is your -- what is your

1 engagement like with -- like, can you describe your  
2 relationship, I guess I would say, with the project  
3 biologists?

4 A. The project biologists are the consultants?

5 Q. Correct. Working for the applicant.

6 A. Yeah. Generally, I like them. Upon a  
7 personal -- I got to say, they're good people, man.  
8 They're good to work with. Awesome scientists. Ask  
9 good questions. So that's just from a personal  
10 perspective.

11 But working with them on the project, everything  
12 goes through EFSEC or we make EFSEC aware of it.  
13 Occasionally there might be a quick email or phone call  
14 saying, Hey, did you look at this or did you see that?  
15 But most of the times, it's through the formal channels  
16 of EFSEC.

17 Q. All right. And I only ask that question to make  
18 Troy and Erik feel really good about themselves.

19 A. Yes.

20 Q. I appreciate it.

21 A. Yes. Thanks.

22 Q. Because they need that stoked, you know.

23 A. They're good guys.

24 Q. No, they are. Right.

25 So turning to some of the issues that you have

1 talked about with land conversions, and you have  
2 described the county land conversions as a significant  
3 distributor to the decline of ferruginous hawk, can you  
4 talk further about that?

5 A. I don't recall making a specific reference that  
6 conversions were directly impacting ferruginous. It may  
7 have been a circular route on that.

8 Most -- yeah. Loss of range land and  
9 shrub-steppe habitat in Benton and Franklin Counties  
10 contributes to abandonment or loss of ferruginous  
11 territories. Fortunately, many of the landowners that  
12 have these nesting territories on their property, it's  
13 been in the family for decades. In fact, we had a nest  
14 up the street here that hasn't been occupied for 20  
15 years, and it was reoccupied last year. So there was  
16 obviously some components of that territory.

17 So when we do have a development or something  
18 that's going to impact one of those nesting areas, we're  
19 very concerned about it and try to, you know, get some  
20 avoidance on those areas.

21 Q. And I think -- and I wrote this down. You  
22 stated that urban sprawl and agricultural land uses are  
23 the biggest impacts on the population of ferruginous  
24 hawk; is that your opinion?

25 A. In Benton and Franklin Counties, yeah. I'm not

1 familiar with their -- I guess how they occupy the  
2 landscapes in other counties around here. But  
3 throughout my -- throughout time, my understanding,  
4 Benton and Franklin Counties have been the strongholds  
5 of the ferruginous hawk. And now that we've lost a lot  
6 of the hawks and a lot of the territories, we're in a  
7 bad spot. So yeah.

8 **Q. Yeah.**

9 A. And we had agricultural development and just the  
10 growth of agriculture have been the two drivers of that  
11 of late. Yes.

12 **Q. And has WDFW -- does WDFW have any role in**  
13 **advising or commenting on actions of the county that**  
14 **open up additional lands for residential development?**

15 A. Yes. We -- we have habitat biologists and  
16 wildlife biologists and fisheries biologists local, I  
17 filled that role for some time. And those folks are  
18 engaged on the development review process. So typical  
19 SEPA action, we are on the mailing list. It will say,  
20 you know, whatever home division or subdivision is being  
21 proposed over here, do you have any comments? And we'll  
22 make formal comments through the SEPA process.

23 **Q. So when you're seeing conversion from**  
24 **shrub-steppe habitat, you are at the table or you are**  
25 **making those comments during the public hearings, let's**

1 say, for a residential subdivision?

2 A. Yes.

3 Q. Is that an active role within WDFW?

4 A. It pretty much is. This area has so much  
5 development, I know there's some that's probably fallen  
6 through the cracks, and we know where there are  
7 important shrub-steppe or wildlife areas in Benton and  
8 Franklin Counties so those kind of get our attention and  
9 other ones we may miss. But yeah, it's active. Yeah,  
10 we really engage on those.

11 Q. Thanks.

12 A. Yes.

13 Q. Ms. Voelekers asked a series of questions about  
14 the level of detail needed for sufficiency of mitigation  
15 measures. Again, you are not the decision-maker in what  
16 the mandatory required mitigation measures are for a  
17 project of this kind, correct?

18 A. Correct.

19 Q. Nesting areas for ferruginous hawk --

20 A. Uh-huh.

21 Q. -- for the moment, not talking about the  
22 nesting -- the historical nesting area in close  
23 proximity to this project.

24 Is there still in your opinion a continuing loss  
25 of ferruginous hawk nesting areas?

1           A. I really haven't kept up on the recent  
2 literature or I guess recent agency work over the last,  
3 let's say, year. They're probably into it right now. I  
4 would -- I would -- I really would want to consult with  
5 the agency on that just to make sure but...

6           Q. Well, maybe -- I'm sorry to interrupt. Maybe  
7 just to reframe it.

8           To your knowledge is there still -- is there  
9 still a decline in ferruginous hawk?

10          A. Yes.

11          Q. From your -- all right.

12          A. Yes, sir.

13          Q. And does WDFW install nesting platforms?

14          A. I recollect that there was -- there must be one  
15 or two I remember that were put on private property in  
16 Franklin County as part of the state SAFE program, it's  
17 State Acres for Wildlife Enhancement, S-A-F-E. I think  
18 there was a couple of platforms, but I don't know of  
19 their success or anything like that.

20          Q. So to be very clear, then, you are not aware one  
21 way or the other of the success of nesting platforms, is  
22 that what you're indicating?

23          A. Correct.

24          Q. Thank you.

25                 Turning to the Habitat Mitigation Plan and

1 Ms. Voelekers went into considerable detail here and I  
2 don't tend to do so, but had you reviewed that iteration  
3 of the plan prior to today?

4 A. I read parts of it yesterday as I was going  
5 through lots of stuff. And then for some odd reason had  
6 a -- I don't know, just kind of a blank when she started  
7 asking me about it, and then I saw the document, and I  
8 go, oh, yeah, now I remember. But I'm glad I read it  
9 again today. It helped.

10 Q. Had you read it, though, before sitting down at  
11 the table there --

12 A. Oh, yes. Yes. Yes, sir. Yeah.

13 Q. And so you consider yourself to be fully  
14 familiar with that version of the Habitat Mitigation  
15 Plan?

16 A. No.

17 Q. Okay. In your opinion, does an applicant have a  
18 regulatory or legal responsibility to restore lost  
19 habitat?

20 MR. HEAD: I'm going to object to the extent it  
21 calls for a legal conclusion.

22 MR. MCMAHAN: I thought you might object, Randy.

23 Q. (By Mr. McMahan) So if you wouldn't mind  
24 answering the question, I would appreciate it,  
25 Mr. Ritter.

1           A. Do we have a regulatory authority, right? I'm  
2   rephrasing. I can't remember the question. Those  
3   objections --

4           Q. Yeah. Does an applicant have a regulatory and  
5   legal responsibility to restore lost habitat?

6           MR. HEAD: Same objection.

7           MS. VOELEKERS: Objection to form.

8           Q. (By Mr. McMahan) Understanding Mr. Head has an  
9   objection.

10          A. Does the applicant have a regulatory authority?

11          Q. Yeah. Responsibility. Regulatory  
12   responsibility. If I read that wrong or said that  
13   wrong, I apologize.

14          Have a regulatory responsibility to restore lost  
15   habitat as part of a development proposal.

16          A. Not that I'm aware of.

17          Q. All right. And are you aware of the 2023  
18   ferruginous hawk data report recently released by West?

19          A. I recall reading that or looking at it I think.  
20   I mean, I would have to see the cover.

21          Q. So you're not aware one way or the other of  
22   whether ferruginous hawk have been nesting in the  
23   vicinity of the project in the area that you've been  
24   talking about in the deposition?

25          A. Not this year, no. I'm not aware of nesting in

1 the area this year.

2 Q. Okay. So does that mean you're not aware of it  
3 or there has been none reported?

4 A. I'm not aware of it.

5 Q. Okay. That's fine.

6 And how would you describe your general knowledge  
7 with the body of work that the applicant has created for  
8 the application?

9 A. How -- can you ask that --

10 Q. Your knowledge of that work.

11 A. Fairly well. I mean, I have gone through it  
12 quite a bit over the couple weeks, looking through  
13 various parts of it, it's fairly comprehensive.

14 Q. Okay. Thank you for that.

15 Turning just to a couple of questions about wind  
16 power guidelines and then I think I'll be done. You  
17 talked about function and values of habitat. Is the  
18 assessment of functional values a commitment or is it an  
19 assessment?

20 A. It's a really good question. As you know, the  
21 wind power guidelines, well, No. 1, they're outdated,  
22 but No. 2, they just -- they're habitat, right?  
23 Habitat, habitat. And functions and values, they come  
24 with perhaps a better way to do that is to be able to  
25 quantify the habitat to say, What are your functions and

1 values? And none of our mitigation documents thus far  
2 or mitigation guidance talk about how to assess a  
3 function and value in my recollection.

4 Do we have published documents that tell you how  
5 to quantify and rank the quality, hence, the function  
6 and value of shrub-steppe? Yes, we do. Do we require  
7 it? No. Do we recommend it? Yes, in some cases. Do  
8 we actively use it on a project site? Not to my  
9 knowledge.

10 Q. Okay. And are you aware of whether the  
11 commitment to addressing functional values are imbedded  
12 into the 2009 wind power guidelines?

13 A. To my recollection, no. No. They are -- I  
14 really -- I don't think so. It's a --

15 Q. Is that --

16 A. Go ahead.

17 Q. I'm sorry. Go ahead.

18 A. I can't remember. It's an old document, and it  
19 was a different time, a different thought process.

20 Q. Okay. Has WDFW considered -- since you've  
21 indicated it's vintage and I was there with you then --

22 A. Yes.

23 Q. -- have you considered updating the guidelines?

24 A. Yes. Yes, with the two new staff we've got  
25 onboard, I believe this month we have an internal

1 brainstorming session on how to get on track with not  
2 only developing solar guidelines but updating the wind  
3 guidelines.

4 Q. And do you have any sense of when that is likely  
5 to kick off?

6 A. Well, internally kicking off here in the next  
7 month or so as we brainstorm. We want to -- Emily,  
8 Michelle, and I want to get it on people's calendars on  
9 a regular basis so we can drive this to a finish line.

10 My understanding is the agency has funding to  
11 hire a consultant to help us drive the process and to  
12 engage stakeholders so that should help a lot.

13 Q. All right. And my last question to confirm, it  
14 is your knowledge, I gather, that 80 plus or  
15 approximately 80 percent of the land proposed for siting  
16 in wind energy generation facility is agricultural land;  
17 is that correct?

18 A. Yes, sir.

19 Q. And I assume you would confirm also that the  
20 wind power guidelines do not require any mitigation for  
21 agricultural land conversions?

22 A. Correct.

23 MR. MCMAHAN: Not seeing anything else from my  
24 clients in my email, I believe I'm done. Thank you,  
25 Mr. Ritter.

1 THE WITNESS: Thank you.

2 MS. VOELEKERS: Randy, I have a few follow-up  
3 questions, but I want to give you a minute in case you  
4 have any.

5 MR. HEAD: I have just a couple of questions, I  
6 think really just two, that I can ask now or I can ask  
7 later, whatever is most convenient for you.

8 MS. VOELEKERS: I need to grab another document  
9 from my pile so why don't you go ahead.

10

11

EXAMINATION

12 BY MR. HEAD:

13 Q. So Mr. Ritter, you know me, Randy Head,  
14 Assistant Attorney General. I represent DFW.

15 Ms. Voelekers asked a number of questions early  
16 on in the deposition about whether or not you consult  
17 with or could consult with tribal biologists, do you  
18 recall that?

19 A. Yes.

20 Q. So just to clarify, are you in any way  
21 prohibited from consulting with a tribal biologist or  
22 tribal staff if you need to?

23 A. Did you use the word "consult"? Yeah, no. I  
24 know what -- I know. I'm just -- no, there's nothing  
25 prohibiting me from talking to tribal biologists about

1 these projects.

2 MR. HEAD: Thank you. That's all, Shona.

3 MS. VOELEKERS: A couple follow-up questions and  
4 one more document.

5

6 FURTHER EXAMINATION

7 BY MS. VOELEKERS:

8 Q. I didn't get it perfectly written down, but I  
9 think I can still ask my question. Mr. McMahan  
10 referenced urban development and agricultural  
11 development as the two primary reasons for loss of  
12 ferruginous hawk --

13 A. Uh-huh.

14 Q. -- habitat. Is it possible, given your  
15 knowledge of the upcoming proposed projects, that  
16 renewable energy projects could join those two  
17 categories of development as the most significant  
18 impacts on ferruginous hawk in their habitat?

19 A. Yes. There's -- the two things I mentioned are  
20 two of probably several stressors on our landscapes for  
21 native habitats and wildlife. And renewable energy is a  
22 new stressor on the environment.

23 Q. And given the volume of renewable energy  
24 projects being proposed, could it become a very  
25 significant stressor on the environment?

1           A. I don't know about significant. We talked about  
2 earlier location and siting, you know, and I mean, 50  
3 solar projects is not that bad if they're put in the  
4 right spot, you know, and we avoid and minimize  
5 environmental issues and whatever else. I don't want to  
6 say significant because I don't -- I think that's kind  
7 of really jumping way out there.

8           Q. Okay. So but the design and siting of renewable  
9 energy projects could impact how much they impact the  
10 habitat?

11          A. Oh, definitely, yes. Yes.

12          Q. Mr. McMahan also referenced a -- I believe he  
13 said, quote, the applicant's body of work, and asked if  
14 you had reviewed it. I would like to be a little more  
15 specific.

16                 Aside from the last couple weeks, basically  
17 before you even received the subpoena, in your  
18 engagement with the applicant and consultants, have you  
19 been reviewing the materials provided to them as they  
20 have been provided to you?

21          A. Yes.

22          Q. So the applicant's body of work specific to any  
23 part of the application or proposed mitigation plan or  
24 other reports by the applicant's consultant, it's fair  
25 to say that you have been reviewing those consistently

1 since 2020?

2 A. Yeah. But to clarify here, I'm reviewing  
3 environmental and biological information. There's a lot  
4 of other stuff.

5 Q. Right. You're not reading every page that's on  
6 the --

7 A. Of the engineering report. Some of it's  
8 interesting and I do look at it, but I really focus on  
9 the environmental documentation.

10 Q. So you reviewed all the relevant --

11 A. Yes.

12 Q. -- body of work produced by the applicant and  
13 its consultants?

14 A. Yes.

15 Q. Prior to the issuance of my subpoena?

16 A. Yes.

17 Q. Okay. Thank you.

18 MS. VOELEKERS: I have one more document, and  
19 it's No. 10 on the email, and I'm going to ask our court  
20 reporter what number we're on for exhibit.

21 THE COURT REPORTER: 8.

22 (Exhibit No. 8 marked for identification.)

23 MS. VOELEKERS: This will be Exhibit 8.

24 Q. (By Ms. Voelekers) Do you recognize this  
25 document?

1 A. Oh. Oh, yeah. Yeah. Yes, I do.

2 Q. And how do you recognize it?

3 A. Well, it was prepared by Erik at West, and we  
4 talked about Population Viability Analysis related to  
5 the project in Eastern Washington specific. And I  
6 believe I got a copy of this. In fact, I'm pretty sure  
7 I did. Yeah. Okay.

8 Q. Can you look at it a little closer and confirm  
9 whether or not you've reviewed this document in full  
10 before?

11 A. I -- boy. I know I haven't done it in full.  
12 This -- if this came -- it's dated November 14th, which  
13 makes me think if I got it, it was a few weeks later,  
14 we're talking the holidays, I was heavy into work on  
15 various other aspects of the Horse Heaven Hills Project.  
16 Seriously, because we prepared comments that were on the  
17 final EIS or something like that that we submitted in  
18 January.

19 Q. The draft EIS?

20 A. Yeah. This would have been a nice distraction  
21 for a moment till I had to get back to work on that. So  
22 if I did get it, I looked at it briefly.

23 Q. Do you know why this document was created?

24 A. No, I don't know why it was created.

25 MR. MCMAHAN: Ms. Voelekers, I'm sorry. Tim

1 McMahan here. I'm a step behind you. Can you tell us  
2 again which exhibit you're looking at?

3 MS. VOELEKERS: This is Erik Jansen and Jared  
4 Swenson's Population Viability Analysis of Ferruginous  
5 Hawk in Eastern Washington.

6 MR. MCMAHAN: And the date?

7 MS. VOELEKERS: November 14, 2022.

8 MR. MCMAHAN: And again, which number is it in  
9 your exhibits?

10 MS. VOELEKERS: 10.

11 MR. MCMAHAN: All right. Thank you. All right.  
12 I got it. Thanks.

13 A. Hmmm.

14 Q. (By Ms. Voelekers) So you don't know why this  
15 document was created?

16 A. I can -- I could offer some thoughts on that.

17 Q. What are your thoughts about why this document  
18 was created?

19 A. I recall that I think it was in the fall of  
20 2022, we -- we, the project, EFSEC, and WDFW -- were  
21 having discussions about ferruginous hawk, and I believe  
22 the project said, We're going to -- we're thinking about  
23 doing a population viability analysis, and some other,  
24 oh, resource selection analysis for the ferruginous  
25 hawk.

1           And we made a formal response to EFSEC that  
2     said, We don't believe either of these things should be  
3     done. Resource selection analysis, yeah, that was for  
4     nesting territories and this was population. We said we  
5     don't believe either of these should be done, and we  
6     provided written reasons why they shouldn't be done. So  
7     we recommended to EFSEC that we didn't need this  
8     information for us to make any further decisions about  
9     ferruginous hawk. We have all the information we need.  
10    So I think the project still went ahead and did it  
11    anyway.

12           Q. It wasn't -- just to be clear, then, it wasn't  
13    at the request or recommendation of WDFW?

14           A. Oh, correct. Yeah.

15           MS. VOELEKERS: I don't have any other questions  
16    today. We can go off the record unless there -- does  
17    anyone else have any final questions?

18           MR. MCMAHAN: One follow up, if you don't mind,  
19    Ms. Voelekers, to your questions.

20

21   FURTHER EXAMINATION

22    BY MR. MCMAHAN:

23           Q. So Mr. Ritter, just to be clear, you have, prior  
24    to today, read the Population Viability Analysis for  
25    Ferruginous Hawk?

1           A. I don't recall that I've read it all. I really  
2 don't.

3           Q. And have you read the West report that was  
4 issued I believe earlier this year on cumulative impacts  
5 throughout the Columbia Basin region?

6           A. Was that specific to ferruginous or was that for  
7 all --

8           Q. I'm sorry, excuse me. Yeah.

9           A. It's a cumulative one. They have done it  
10 several times so far. They started off ten years ago  
11 and they keep updating it.

12          Q. There you go. Yeah. With the recent update.

13          A. Again, I don't know if I have read the whole  
14 thing but I'm aware of it. And I may have looked at  
15 sections of it, but I don't recall which ones.

16          MR. MCMAHAN: Okay. That's fine. Thank you.

17          THE WITNESS: You bet.

18          MR. HEAD: I don't have any follow-up questions.

19          MS. VOELEKERS: Ken, do you have any questions  
20 at this point?

21          MR. HARPER: No questions. Thank you.

22          MS. VOELEKERS: Okay. It looks like there's  
23 something in the chat. I just want to make sure that  
24 we're not -- okay.

25          THE WITNESS: That was from Carol. It said

1 something about Rick.

2 MS. VOELEKERS: Okay. Then we can go off the  
3 record.

4 THE COURT REPORTER: Did you want to order the  
5 transcript?

6 MS. VOELEKERS: Yes, we do.

7 (DEPOSITION CONCLUDED AT 2:49 P.M.)

8 (SIGNATURE RESERVED.)

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1 CHANGES IN FORM AND SUBSTANCE REQUESTED BE MADE  
2 IN THE FOREGOING ORAL EXAMINATION TRANSCRIPT:

3 (NOTE: If no changes desired, please sign and date  
4 where indicated below.)

4	PAGE	LINE	CORRECTION AND REASON
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18 I, MICHAEL RITTER, hereby declare under penalty of  
19 perjury that I have read the foregoing deposition and  
20 that the testimony contained therein is a true and  
correct transcript of my testimony, noting the  
corrections above.

21

MICHAEL RITTER

22

Date

23

24 See: Wash. Reports 34A, Rule 30(e)  
USCA 28, Rule 30(e)

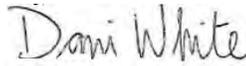
25

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2 provisions are not authorized by me and are not at my  
3 direction or with my knowledge.

4 IN WITNESS WHEREOF I have set my hand this 13th  
5 day of June, 2023.

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8 DANI WHITE  
9 CCR NO. 3352

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1 CHANGES IN FORM AND SUBSTANCE REQUESTED BE MADE  
 2 IN THE FOREGOING ORAL EXAMINATION TRANSCRIPT:

3 (NOTE: If no changes desired, please sign and date  
 4 where indicated below.)

5	PAGE	LINE	CORRECTION AND REASON
6	7	7	Change "Approximately 1989." to
7			"Approximately 1992." Incorrect
8			Date.
9	18	13	Change "Approximately 6 years" to
10			"Approximately 5 years." Incorrect
11			Date.
12	111	9	Change "Development." to "Fire,
13			development, and agriculture." Answer was incomplete.

14  
 15  
 16  
 17  
 18 I, MICHAEL RITTER, hereby declare under penalty of  
 19 perjury that I have read the foregoing deposition and  
 20 that the testimony contained therein is a true and  
 21 correct transcript of my testimony, noting the  
 22 corrections above.

21 MICHAEL RITTER *Michael Ritter*

22 Date *June 14, 2023*

23 See: Wash. Reports 34A, Rule 30(e)  
 24 USCA 28, Rule 30(e)

25 JOB NUMBER 985309



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

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January 31, 2023

Amy Moon  
Washington Energy Facility Site Evaluation Council  
621 Woodland Square Loop SE  
PO Box 43172  
Olympia, WA 98504-3172

Subject: Draft Environmental Impact State: Horse Heaven Hills Wind/Solar/Battery Storage

Ms. Moon,

The Washington Department of Fish and Wildlife (WDFW) is committed to working with EFSEC and renewable energy projects to ensure that these projects are sited in a manner that avoid impacts on fish and wildlife resources and that fully support Governor Inslee's goals for decarbonization in Washington State.

Over the last two years since the Application for Site Certification (ASC), WDFW has participated in meetings with EFSEC that frequently included the applicant. We have provided defensible biological information regarding conservation areas, avoidance areas (specifically for Ferruginous Hawks) (FEHA), avoidance and minimization to WDFW Priority Species and Habitats (PHS), and mitigation concepts and sites. We did this with the understanding that some of this information might aid the project in designing a layout (i.e. alternative build options) that would avoid and minimize impacts to PHS. Unfortunately, the layout in the Draft EIS is identical to that in the ASC along with the ambiguity of turbine types and number and total solar development areas.

We identified significant PHS issues in our original comment letter and even recommended an alternate project layout of only solar on the agriculture lands in the southwest of the lease area and beyond to preserve the ridgeline, associated corridors, and avoid/minimize adverse impacts to PHS. Specifically, we stated, "to reduce the landscape-scale impact of the HWSB and reduce impacts to connectivity, we recommend that the project focus on solar development only on agricultural and grasslands in the southern edge of the HWSB lease area and to the southwest. This includes transmission corridors and all supporting infrastructure." Based on this we do not agree on how the Solar Only Alternative was presented as being limited to 10K acres--areas that the project designated--and subsequently eliminated in the Draft EIS when in fact there is 72K acres under project control. Similarly, we do not agree on how



Ritter-02485

the Wind Only Alternative was presented as being limited to only the existing 11k micro-siting corridor of a 72K acre project area.

We appreciate that some of the information we shared in our meetings, specifically related to avoiding development within FEHA core areas ( $r = 2$  miles around a nest site/territory), has been incorporated into the Draft EIS. In our meetings we recommended that all nest territories identified in PHS be under this protection and the Draft EIS supports this stating “specifically, mitigation measures for ferruginous hawks would require avoiding siting Project components within 2 miles of ferruginous hawk nests documented in PHS data...” However, the Draft EIS goes on to say that, “the extent to which ferruginous hawk mitigation may be implemented will be informed by the final Project layout and field data on ferruginous hawk presence and habitat use of the Lease Boundary collected through pre-construction monitoring programs.” If this is referencing the active FEHA nest data ( $n = 2$ ) collected by the project from 2017-2019, we shared with you in January 2022 that, “WDFW considers the relevance of all historical FEHA nest (territory) locations ( $n = 16$ ) as relevant for management to provide known historical habitat for recovery and to meet recovery goals.”

Then in February 2022, we shared with EFSEC that, “...there are 4 FEHA core area exclusion zones -from West to East - Webber, Badger, Sheep, and the eastern one, which is in the area of the Coyote Canyon FEHA nesting territory. Based on research, these core areas are where FEHA use is the highest but does not include the entire home ranges, so FEHA will still be exposed to turbines outside of these areas. Additionally, there are two turbines to the north just outside of the Webber exclusion zone that we also discussed with you that should also be excluded.” Additionally, we pointed out that two FEHA nesting territories (Beck Road and 4-mile) are both within the eastern solar development area just to the east of Highway 395.

Also in February 2022, we met with EFSEC and the applicant and provided the figure below and justification for recommending the central blue polygon as mitigation, offered ideas for project infrastructure and operations and vegetation management within the mitigation area, and identified turbine exclusion zones within the red FEHA circles

## RCW 42.56.430(2) (Sensitive Wildlife Data)

Hot Pink = project area; Green Diamonds = 244 wind turbines, Orange = solar; Yellow Diamonds = Historic (and active  $n = 2$ ) FEHA nests that represent 16 territories; Red Circles = an example of active nest core areas ( $r = 2$  miles); White = habitat mitigation proposed by project; Blue = Landscape mitigation options proposed by WDFW; Dark green = Arid Lands Initiative (ALI) priority core areas; Light green = ALI priority linkages; Brown route = least cost pathway for mule deer; Green route = least cost pathway ground squirrels; Grayish/green polygons = ground squirrel habitat concentration areas.

And finally, in a May 2022 correspondence to EFSEC, "...we have the information we need to determine if the FEHA population within the Horse Heaven Hills could potentially be impacted by the project. We have made this determination based on best available science and information from the Periodic Status Review (Hayes and Watson 2021) that recommended and resulted in this bird species being listed as a State of Washington Endangered Species. Our assessment is based on core nesting habitat areas ( $r = 3.2\text{km}$ ) of both active and unoccupied nests and the 244-turbine layout. By using the smaller core nesting area, and not the home range area ( $r = 10\text{km}$ ), we have already provided a meaningful compromise for renewable energy development and for the conservation of FEHA within and adjacent to the project. Within these smaller core areas, we have recommended the project consider no development of wind turbines and/or curtailment based on seasonal timing, ongoing avian monitoring and field observations, or using Identiflight-type technology. At this time, we are most interested in examining how the fewer (but larger) layout of 150 turbines and alternate turbine siting could further avoid and minimize potential impacts to FEHA and provide conservation of FEHA core nesting areas."

Comprehensively regarding FEHA, we do not agree with the DEIS that impacts to this Washington State Endangered Species would be "Limited", "Confined", and "Local" as described in Chapter 4. The information in the Periodic Status Review (Hayes and Watson 2021) that the FEHA breeding population in WA State is in a sustained decline and that "...the percentage of surveyed nesting territories supporting breeding pairs has significantly declined in the core breeding range of the species in Benton and Franklin counties..." provides justification to list any impact to FEHA from direct and indirect causes as "Regional."

We do not support the establishment of a Technical Advisory Committees (TAC) as a mitigation component to initially review and provide input to pre-construction surveys and project layout. In our opinion, the project needs to provide additional reasonable alternatives based on information they have already received. TAC are typically formed to review, monitor, and make recommendations regarding post-construction project operations related to bird/bat monitoring, revegetation, noxious weed control, etc. Issues, for example, such as project feasibility, siting and layout, avoidance, minimization, and to some extent a mitigation framework should be determined through a public process that results is more than just a single Build Alternative proposed by the applicant.

If the project were built with 244 turbines and three solar areas and all supporting infrastructure, then we would agree that the Zone of Influence (ZOI) analysis and conclusion that the project will result in over 53K of indirect habitat loss created by disturbances. This is in combination with the almost 7k of direct habitat loss results in 83% of the 72k project area. Most of these impacts are to agricultural lands around which are isolated native habitats that together form a mosaic of habitats that provided wildlife connectivity, foraging areas, and den and nest sites. As we stated in our original comment letter, the sheer size of this project, and the impacts to WDFW PHS and connectivity corridors will be difficult if not impossible to mitigate. Knowing this, we have worked with EFSEC and the applicant to provide reasonable solutions to avoid, minimize, and mitigate that supports both conservation and renewable energy, but little of our input was used in the DEIS and none was considered for alternate project layouts.

In closing, WDFW recommends that the Draft EIS be re-issued after first considering the comments received from WDFW and others on this project and work with the applicant to develop reasonable alternatives for analysis and consideration.

Please contact me at 509-380-3028 or at Michael.Ritter@dfw.wa.gov with any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter". The signature is written in a cursive, slightly slanted style.

Michael Ritter  
Lead Planner: Solar and Wind Energy Development



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DEPARTMENT OF FISH AND WILDLIFE

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January 31, 2022

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Washington Energy Facility Site Evaluation Council  
621 Woodland Square Loop SE  
PO Box 43172  
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Subject: Draft Environmental Impact State: Horse Heaven Hills Wind/Solar/Battery Storage

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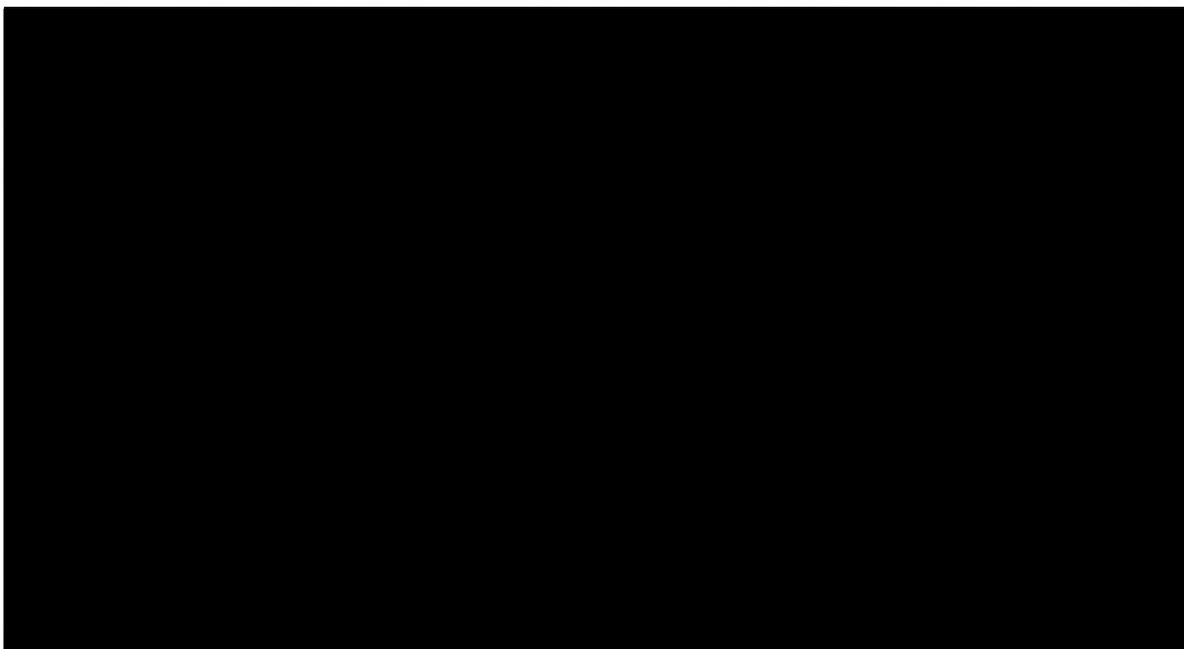
We appreciate that some of the information we shared in our meetings, specifically related to avoiding



development within FEHA core areas ( $r = 2$  miles around a nest site/territory), has been incorporated into the Draft EIS. In our meetings we recommended that all nest territories identified in PHS be under this protection and the Draft EIS supports this stating “specifically, mitigation measures for ferruginous hawks would require avoiding siting Project components within 2 miles of ferruginous hawk nests documented in PHS data...” However, the Draft EIS goes on to say that, “the extent to which ferruginous hawk mitigation may be implemented will be informed by the final Project layout and field data on ferruginous hawk presence and habitat use of the Lease Boundary collected through pre-construction monitoring programs.” If this is referencing the active FEHA nest data ( $n = 2$ ) collected by the project from 2017-2019, we shared with you in January 2022 that, “WDFW considers the relevance of all historical FEHA nest (territory) locations ( $n = 16$ ) as relevant for management to provide known historical habitat for recovery and to meet recovery goals.”

Then in February 2022, we shared with EFSEC that, “...there are 4 FEHA core area exclusion zones -from West to East - Webber, Badger, Sheep, and the eastern one, which is in the area of the Coyote Canyon FEHA nesting territory. Based on research, these core areas are where FEHA use is the highest but does not include the entire home ranges, so FEHA will still be exposed to turbines outside of these areas. Additionally, there are two turbines to the north just outside of the Webber exclusion zone that we also discussed with you that should also be excluded.” Additionally, we pointed out that two FEHA nesting territories (Beck Road and 4-mile) are both within the eastern solar development area just to the east of Highway 395.

Also in February 2022, we met with EFSEC and the applicant and provided the figure below and justification for recommending the central blue polygon as mitigation, offered ideas for project infrastructure and operations and vegetation management within the mitigation area, and identified turbine exclusion zones within the red FEHA circles.



Hot Pink = project area; Green Diamonds = 244 wind turbines, Orange = solar; Yellow Diamonds = Historic (and active  $n = 2$ ) FEHA nests that represent 16 territories; Red Circles = an example of active nest core areas ( $r = 2$

miles); White = habitat mitigation proposed by project; Blue = Landscape mitigation options proposed by WDFW; Dark green = Arid Lands Initiative (ALI) priority core areas; Light green = ALI priority linkages; Brown route = least cost pathway for mule deer; Green route = least cost pathway ground squirrels; Grayish/green polygons = ground squirrel habitat concentration areas.

And finally, in a May 2022 correspondence to EFSEC, "...we have the information we need to determine if the FEHA population within the Horse Heaven Hills could potentially be impacted by the project. We have made this determination based on best available science and information from the Periodic Status Review (Hayes and Watson 2021) that recommended and resulted in this bird species being listed as a State of Washington Endangered Species. Our assessment is based on core nesting habitat areas ( $r = 3.2\text{km}$ ) of both active and unoccupied nests and the 244-turbine layout. By using the smaller core nesting area, and not the home range area ( $r = 10\text{km}$ ), we have already provided a meaningful compromise for renewable energy development and for the conservation of FEHA within and adjacent to the project. Within these smaller core areas, we have recommended the project consider no development of wind turbines and/or curtailment based on seasonal timing, ongoing avian monitoring and field observations, or using Identiflight-type technology. At this time, we are most interested in examining how the fewer (but larger) layout of 150 turbines and alternate turbine siting could further avoid and minimize potential impacts to FEHA and provide conservation of FEHA core nesting areas."

Comprehensively regarding FEHA, we do not agree with the DEIS that impacts to this Washington State Endangered Species would be "Limited", "Confined", and "Local" as described in Chapter 4. The information in the Periodic Status Review (Hayes and Watson 2021) that the FEHA breeding population in WA State is in a sustained decline and that "...the percentage of surveyed nesting territories supporting breeding pairs has significantly declined in the core breeding range of the species in Benton and Franklin counties..." provides justification to list any impact to FEHA from direct and indirect causes as "Regional."

We do not support the establishment of a Technical Advisory Committees (TAC) as a mitigation component to initially review and provide input to pre-construction surveys and project layout. In our opinion, the project needs to provide additional reasonable alternatives based on information they have already received. TAC are typically formed to review, monitor, and make recommendations regarding post-construction project operations related to bird/bat monitoring, revegetation, noxious weed control, etc. Issues, for example, such as project feasibility, siting and layout, avoidance, minimization, and to some extent a mitigation framework should be determined through a public process that results in more than just a single Build Alternative proposed by the applicant.

If the project were built with 244 turbines and three solar areas and all supporting infrastructure, then we would agree that the Zone of Influence (ZOI) analysis and conclusion that the project will result in over 53K of indirect habitat loss created by disturbances. This is in combination with the almost 7k of direct habitat loss results in 83% of the 72k project area. Most of these impacts are to agricultural lands around which are isolated native habitats that together form a mosaic of habitats that provided wildlife connectivity, foraging areas, and den and nest sites. As we stated in our original comment letter, the sheer size of this project, and the impacts to WDFW PHS and connectivity corridors will be difficult if not impossible to mitigate. Knowing this, we have worked with EFSEC and the applicant to provide reasonable solutions to avoid, minimize, and mitigate that supports both conservation and renewable energy, but little of our input was used in the DEIS and none was considered for alternate project layouts.

In closing, WDFW recommends that the Draft EIS be re-issued after first considering the comments received from WDFW and others on this project and work with the applicant to develop reasonable alternatives for analysis and consideration.

Please contact me at 509-380-3028 or at [Michael.Ritter@dfw.wa.gov](mailto:Michael.Ritter@dfw.wa.gov) with any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter". The signature is written in a cursive, slightly slanted style.

Michael Ritter  
Lead Planner: Solar and Wind Energy Development

**APPENDIX L: DRAFT WILDLIFE AND HABITAT MITIGATION PLAN  
(NEW)**



# Draft Wildlife and Habitat Mitigation Plan

## Horse Heaven Wind Farm

Benton County, Washington

Prepared for:  
Horse Heaven Wind Farm, LLC

Prepared by:



19803 North Creek Parkway  
Bothell, WA 98011

Submitted February 2021  
Revised February 2022  
Revised December 2022

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## ACRONYMS AND ABBREVIATIONS

ALI	Arid Lands Initiative
Applicant	Horse Heaven Wind Farm, LLC
ASC	Application for Site Certification
BCC	Benton County Code
BESS	battery energy storage system
CRP	Conservation Reserve Program
EFSEC	Energy Facility Site Evaluation Council
FWHCA	fish and wildlife habitat conservation area
GE	General Electric
GMA	Growth Management Act
HCA	Habitat Concentration Area
HMP	Wildlife and Habitat Mitigation Plan
km	kilometer
LCP	Least-Cost Path
Micrositing Corridor	Wind Energy Micrositing Corridor
MW	megawatt
MWac	megawatts output as alternating current
O&M	operation and maintenance
PHS	Priority Habitats and Species
Project	Horse Heaven Wind Farm
PV	photovoltaic
RCW	Revised Code of Washington
SCA	Site Certification Agreement
SEPA	State Environmental Policy Act
Turbine	wind turbine generator
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WHCWG	Wildlife Habitat Connectivity Working Group

## 1 INTRODUCTION

The Horse Heaven Wind Farm (Project) is a renewable energy generation facility that would have an energy injection capacity of up to 1,150 megawatts (MW) using a combination of wind and solar facilities as well as battery energy storage systems (BESS). Horse Heaven Wind Farm, LLC (the Applicant) proposes to construct wind turbine generators (Turbines) at a subset of 244 locations and up to three solar arrays, with all possible Turbine locations and solar array extent reviewed in the analysis of potential resource impacts in the Project's Energy Facility Site Evaluation Council (EFSEC) Application for Site Certification (ASC) and this Draft Wildlife and Habitat Mitigation Plan (HMP). Although all 244 Turbine locations and all three solar arrays are analyzed to conservatively assess potential impacts from the Project, not all Turbines and solar arrays will be constructed and in fact, under a mitigation agreement with the Department of Defense, the Project would be restricted to 235 Turbines. As described in the EFSEC ASC, the Project is considering two general Turbine options comprising four different Turbine technologies to facilitate flexible Turbine siting: Turbine Option 1 consists of up to 244 General Electric 2.82-MW or 3.03-MW Turbines, and Turbine Option 2 consists of up to 150 General Electric 5.5-MW or Siemens Gamesa 6.0-MW Turbines.

Power generated by the Project would be transmitted to existing Bonneville Power Administration transmission lines via two interconnections. Other Project components would include up to two BESS, underground and limited overhead electrical collection lines, underground communication lines, new Project substations, access roads, operation and maintenance (O&M) facilities, meteorological towers, control houses, and temporary construction yards. The Project would likely be built using a phased approach, with two phases currently under consideration. The EFSEC ASC describes the following example phased approach: Phase 1 could consist of 650 MW, with 350 MW generated via wind plus 300 MWac (megawatts output as alternating current) generated via solar; Phase 2 could consist of 500 MW, with either 250 MW generated via wind plus 250 MWac generated via solar or 500 MW generated via wind. Construction of the two Project phases would last approximately 11 months each, for a total of approximately 22 months of construction activity for the full 1,150-MW capacity build-out.

The HMP evaluated impacts at various spatial scales, which included the following three primary areas: the Project Lease Boundary, Wind Energy Micrositing Corridor (Micrositing Corridor), and Solar Siting Areas. The Project Lease Boundary (i.e., the extent of parcels in which the Applicant has executed a lease to construct Turbines, solar arrays, and associated facilities) encompasses approximately 72,428 acres and contains the Project's Micrositing Corridor (i.e., the area in which the Turbines and supporting facilities would be sited during the final design) and the Solar Siting Areas (i.e., three areas under consideration for siting of the proposed solar arrays during the final design) (see Figure 3.4-1 of the EFSEC ASC). The Micrositing Corridor and the Solar Siting Areas are larger than the Project's final footprint to allow minor rerouting to optimize the design and to avoid resources that may be discovered during the final design and pre-construction process.

## 2 REGULATIONS AND GUIDELINES

The HMP was developed to meet the regulatory standards described in the regulations and guidelines summarized in this section.

## 2.1 EFSEC

Energy facilities subject to review by EFSEC include thermal electrical generation, pipelines, electrical transmission lines, petroleum refineries, petroleum storage, and alternative energy electrical generation (wind, solar, geothermal, landfill gas, wave or tidal action, and biomass). However, alternative energy facilities (of any size) are not required to enter the EFSEC process in Washington; the applicant may opt in to the EFSEC process, or may choose to permit the project at the local level. For the proposed Project, the Applicant has elected to be sited under EFSEC jurisdiction.

Once an alternative energy facility has elected EFSEC permitting, EFSEC coordinates all evaluation and licensing steps for siting certain energy facilities in Washington. EFSEC specifies the conditions of construction and operation. If approved, a Site Certification Agreement (SCA) is issued in lieu of other individual state or local agency permits. Chapter 80.50 of the Revised Code of Washington (RCW) includes the laws EFSEC must follow in siting and regulating major energy facilities. Title 463 of the Washington Administrative Code (WAC) sets forth the regulations establishing how EFSEC functions under state and federal law.

EFSEC is responsible for evaluating applications under the Washington State Environmental Policy Act (SEPA; see Section 2.3) and to ensure that environmental and socioeconomic impacts are considered before a site is approved. After evaluating an application, EFSEC submits a recommendation to the Governor. If EFSEC determines that constructing and operating the facility will produce minimal adverse effects on the environment, ecology of the land and wildlife, and ecology of the state waters and aquatic life, and meets its construction and operation standards, then it recommends that a SCA be approved and signed by the Governor. The SCA lists the conditions the applicant must meet during construction and while operating the facility. WAC 463-60-332 outlines how potential impacts to habitat, vegetation, fish, and wildlife must be addressed in the EFSEC ASC. This information has been prepared and presented in Section 3.4 of the ASC. This HMP has been prepared pursuant to WAC 463-60-332(3), which requires that the EFSEC ASC include a detailed mitigation plan. In addition, this HMP describes how the Project follows the Washington Department of Fish and Wildlife (WDFW) Wind Power Guidelines (WDFW 2009), as applicable, and Policy M-5002, pursuant to WAC 463-60-332(4).

## 2.2 Benton County Critical Areas Ordinance

Under Washington State's Growth Management Act (GMA), all cities and counties are directed to adopt critical areas regulations. Counties and cities are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas (RCW 36.70A.172). Benton County's Critical Areas Ordinance was developed to comply with the requirements of the GMA, and was most recently updated on August 21, 2018, consistent with the GMA periodic review requirement in RCW 36.70A.130.

Benton County's regulations regarding critical areas are established in Title 15 of the Benton County Code (BCC). Title 15 defines critical areas as including any of the following areas or ecosystems: (1) wetlands (see Chapter 15.04 BCC); (2) critical aquifer recharge areas (see Chapter 15.06 BCC); (3) frequently flooded areas (see Chapter 15.08 BCC); (4) geologically hazardous areas (see Chapter 15.12 BCC); and (5) fish and wildlife habitat conservation areas (FWHCA; see Chapter 15.14 BCC).

Per BCC 15.14.010, FWHCAs include the following: (1) areas where federal or state designated endangered, threatened, and sensitive species have a primary association<sup>1</sup>, (2) state priority habitats and areas associated with state priority species, (3) habitats and species of local importance as designated by Benton County (i.e., shrub-steppe habitat), (4) waters of the state, (5) naturally occurring ponds under 20-acres and their submerged aquatic beds that provide fish or wildlife habitat, (6) lakes, ponds, streams, and rivers planted with native fish populations, (7) Washington State Wildlife Areas, and (8) Washington State Natural Area Preserves and Natural Resource Conservation Areas (Benton County 2018). Information provided in Section 3.4 of the EFSEC ASC submitted for this Project, as well as this HMP, addresses the requirement per BCC 15.14.030 for the Applicant to provide a habitat assessment and discuss the habitat avoidance, minimization, and mitigation measures proposed for the Project.

As described in Section 3.4 of the EFSEC ASC, the Project would include disturbance in areas considered FWHCAs as defined by the BCC Critical Area Ordinance (i.e., primarily shrub-steppe and associated wildlife species). This HMP addresses mitigation for these impacts.

### **2.3 SEPA**

SEPA is the state interdisciplinary policy that identifies and analyzes environmental impacts associated with state governmental decisions, including permits to construct energy facilities. The applicable SEPA statutes and regulations include RCW Ch. 43.21C, Washington Environmental Policy Act, WAC Ch. 197-11, Washington State Department of Ecology SEPA Rules, and Section 6.35 of the BCC, which establish requirements for compliance with SEPA. As the Applicant has elected to be sited under EFSEC jurisdiction, as discussed above, EFSEC will serve as the lead agency for SEPA review. Section 3.4 of the ASC addresses potential impacts to plants and animals. This HMP, in addition to the analysis provided in Section 3.4 of the Project's EFSEC ASC and the analysis presented by EFSEC in its Environmental Impact Statement, supports the finding that, with the implementation of proposed mitigation, probable significant adverse environmental impacts can be reduced to a level of non-significance as defined and understood in SEPA.

### **2.4 WDFW Wind Guidelines**

The Project and this HMP have been developed consistent with WAC 463-60-332 and WAC 365-195-900 through 365-195-925, including adherence to WDFW Wind Power Guidelines as applicable. WDFW published the Wind Power Guidelines in 2009 to provide consistent statewide guidance for the development of land-based wind energy projects that avoid, minimize and mitigate impacts to fish and wildlife habitats in Washington State (WDFW 2009). The guidelines are intended to provide permitting agencies and wind project developers with an overview of the considerations made by WDFW in the review of wind energy project proposals. The permitting authority (e.g., EFSEC) is responsible for SEPA review before issuing a project permit. However, WDFW is considered an agency with environmental expertise through SEPA and provides review and comments on environmental documents. The Applicant used the Wind Power Guidelines to develop this HMP where applicable, including the mitigation considerations listed below summarizing the criteria for the habitat selected to replace the functions and values of habitat impacted by the Project (i.e., replacement habitat):

---

<sup>1</sup> Primary association area—The area used on a regular basis by, in close association with, or is necessary for the proper functioning of the habitat of a critical species. Regular basis means that the habitat area is normally, or usually known to contain a critical species, or based on known habitat requirements of the species, the area is likely to contain the critical species. Regular basis is species and population dependent. Species that exist in low numbers may be present infrequently yet rely on certain habitat types (Benton County 2018).

- Like-kind (e.g., shrub-steppe for shrub-steppe, grassland for grassland) and/or of equal or higher habitat value than the impacted area, noting that an alternative ratio may be negotiated for replacement habitat that differs from impacted habitat;
- Given legal protection (through acquisition in fee, a conservation easement, or other enforceable means);
- Protected from degradation, including development, for the life of the project to improve habitat function and value over time;
- In the same geographical region as the impacted habitat; and
- At some risk of development or habitat degradation and the mitigation results in a net habitat benefit.

## **2.5 WDFW M-5002 Policy**

WDFW established Policy M-5002 requiring or recommending mitigation in 1999. This policy applies to all habitat protection assignments where WDFW is issuing or commenting on environmental protection permits, documents, or violation settlements; or when seeking commensurate compensation for impacts to fish and wildlife resources resulting from oil or other toxic spills. The Applicant reviewed Policy M-5002 to support the development of this HMP, including the following considerations:

- The goal is to achieve no loss of habitat functions and values. Mitigation credits and debits will be based on a scientifically valid measure of habitat function, value, and area. Ratios will be greater than 1:1 to compensate for temporal losses, uncertainty of performance, and differences in functions and values.
- On-site in-kind mitigation is preferred.
- Mitigation plans will include the following: baseline data, estimate of impacts, mitigation measures, goals and objectives, detailed implementation plan, adequate replacement ratio, performance standards to measure whether goals are being reached, maps and drawings of proposal, as-built drawings, operation and maintenance plans (including who will perform), monitoring and evaluation plans (including schedules), contingency plans, including corrective actions that will be taken if mitigation developments do not meet goals and objectives, and any agreements on performance bonds or other guarantees that the proponent will fulfill mitigation, operation and maintenance, monitoring, and contingency plan.
- Mitigation measures will be completed before or during project construction.
- Mitigation site will be protected for the life of the project.
- Mitigation banking may be an acceptable form of mitigation.

### 3 AGENCY CONSULTATION HISTORY

Coordination on the project began with WDFW in 2017 and over time additional agencies and parties have joined the discussions. Table 1 briefly summarizes that coordination, including meeting dates, topics discussed, and key decisions or agreements made.

**Table 1. Summary of Agency Consultation History**

Meeting Date	Parties Present	Topics Discussed	Key Decisions or Agreements
September 19, 2017	<ul style="list-style-type: none"> <li>• USFWS</li> <li>• WDFW</li> <li>• Scout</li> <li>• Tetra Tech</li> <li>• WEST</li> </ul>	<ul style="list-style-type: none"> <li>• Project kick-off</li> <li>• Wildlife and habitat survey approach</li> </ul>	<ul style="list-style-type: none"> <li>• Recommendations were made regarding wildlife and habitat survey methods.</li> </ul>
January 28, 2020	<ul style="list-style-type: none"> <li>• USFWS</li> <li>• WDFW</li> <li>• Scout</li> <li>• Tetra Tech</li> <li>• WEST</li> <li>• Lower Columbia Audubon Society</li> </ul>	<ul style="list-style-type: none"> <li>• Update on project layout</li> <li>• Summary of wildlife and habitat surveys completed to date</li> </ul>	<ul style="list-style-type: none"> <li>• WDFW noted setback recommendations that may be appropriate during construction during the nesting/fledging season for the ferruginous hawk nest observed near the Project that was occupied all 3 years it was surveyed (2017-2019).</li> <li>• WDFW concurred that, based on survey data and lack of irrigated agriculture and wetland resources, sandhill cranes do not occupy the Project Lease Boundary but instead typically fly high above the Project and use the area north of the Project for foraging, loafing, and roosting.</li> <li>• WDFW noted that eastside (interior) grasslands have a 1:1 mitigation ratio for permanent impact.</li> </ul>
January 27, 2021	<ul style="list-style-type: none"> <li>• WDFW</li> <li>• Scout</li> <li>• Tetra Tech</li> <li>• WEST</li> </ul>	<ul style="list-style-type: none"> <li>• Update on project changes, addition of solar and BESS</li> <li>• Summary of habitat, rare plant, and avian surveys</li> </ul>	<ul style="list-style-type: none"> <li>• WDFW noted that the Project was well sited given the level of existing disturbance (e.g., agricultural activity and presence of non-native species) in the area, and identified minimization measures related to fencing that could further reduce potential impacts.</li> </ul>
November 2, 2021	<ul style="list-style-type: none"> <li>• EFSEC</li> <li>• WDFW</li> <li>• Scout</li> <li>• Tetra Tech</li> </ul>	<ul style="list-style-type: none"> <li>• Wildlife and habitat surveys</li> <li>• Habitat impacts</li> <li>• Further avoidance and minimization</li> </ul>	<ul style="list-style-type: none"> <li>• WDFW said wildlife and habitat surveys were done well; no comments.</li> <li>• WDFW reviewed habitat impact tables and thought they looked good.</li> </ul>

Meeting Date	Parties Present	Topics Discussed	Key Decisions or Agreements
			<ul style="list-style-type: none"> <li>WDFW expressed concerns about Sheep and Weber Canyon.</li> <li>WDFW recommended also looking at off-site mitigation options; Scout requested locations or ideas.</li> </ul>
November 16, 2021	<ul style="list-style-type: none"> <li>EFSEC</li> <li>WDFW</li> <li>Scout</li> <li>Tetra Tech</li> <li>WEST</li> <li>Golder</li> </ul>	<ul style="list-style-type: none"> <li>Wildlife and habitat surveys</li> <li>Habitat impact table</li> <li>Impacts to ferruginous hawk</li> <li>Impacts to big game</li> </ul>	<ul style="list-style-type: none"> <li>WDFW reaffirmed agreement with habitat impacts.</li> <li>WDFW requested further minimization in canyon by reducing or moving Turbines and lines to reduce canyon crossings.</li> <li>WDFW recommended avoidance buffers around ferruginous hawk nests during construction; noted that the agency is working on updated guidance on how to address ferruginous hawk for all projects.</li> <li>WDFW noted that pronghorn are not regulated by the agency and recommended that EFSEC consult with the Yakama Nation regarding that species, since the herd was reintroduced by them.</li> </ul>
November 30, 2021	<ul style="list-style-type: none"> <li>EFSEC</li> <li>WDFW</li> <li>Scout</li> <li>Tetra Tech</li> <li>WEST</li> <li>Stoel Rives</li> <li>Golder</li> </ul>	<ul style="list-style-type: none"> <li>Project impacts</li> <li>Avoidance and minimization</li> <li>Mitigation (options and ratios)</li> </ul>	<ul style="list-style-type: none"> <li>Scout provide an update on potentially implementing additional minimization measures through changes to project design.</li> <li>WDFW agreed with the mitigation options presented in the draft HMP.</li> </ul>
December 14, 2021	<ul style="list-style-type: none"> <li>WDFW</li> <li>Scout</li> <li>Tetra Tech</li> <li>WEST</li> </ul>	<ul style="list-style-type: none"> <li>Crossing of canyons by collector lines</li> <li>Ferruginous hawk buffers</li> <li>Pronghorn</li> <li>Mitigation memo</li> </ul>	<ul style="list-style-type: none"> <li>All agreed to memorialize approach to minimize impacts to canyons in the revised HMP.</li> <li>Scout noted that implementing 10 kilometer buffers would be problematic; Golder proposed concepts for use of the buffers in the EIS analysis.</li> <li>Group requested presentation from WDFW on the origins of the buffers.</li> <li>Scout noted that an updated pronghorn memo had been provided, with up to date information from the Yakama Nation; EFSEC and Golder had no questions.</li> </ul>

Meeting Date	Parties Present	Topics Discussed	Key Decisions or Agreements
			<ul style="list-style-type: none"> <li>Mitigation memo was not discussed in detail pending future discussions between WDFW and EFSEC.</li> </ul>
January 6, 2022	<ul style="list-style-type: none"> <li>EFSEC</li> <li>WDFW</li> <li>Scout</li> <li>Tetra Tech</li> <li>WEST</li> <li>Stoel Rives</li> <li>Golder</li> </ul>	<ul style="list-style-type: none"> <li>Ferruginous hawk buffers (presentation by Jim Watson, WDFW)</li> </ul>	<ul style="list-style-type: none"> <li>General discussion about utility of proposed buffers and timing of updated guidance from WDFW.</li> </ul>
January 20, 2022	<ul style="list-style-type: none"> <li>EFSEC</li> <li>Washington Attorney General's Office</li> <li>WDFW</li> <li>Scout</li> <li>Tetra Tech</li> <li>WEST</li> <li>Stoel Rives</li> <li>Golder</li> </ul>	<ul style="list-style-type: none"> <li>Pronghorn memo</li> <li>Mitigation ratios and approach</li> <li>Landscape level analysis</li> </ul>	<ul style="list-style-type: none"> <li>No comments on pronghorn memo received.</li> <li>WDFW confirmed agreement with mitigation ratios and approaches presented in draft HMP.</li> <li>EFSEC presented recommended approach to characterizing mitigation in the documents, which included a criteria-based approach, rather than showing specific sites; WDFW concurred with this approach.</li> <li>WDFW provided a verbal summary of landscape level analysis they had prepared.</li> </ul>

EFSEC – Energy Facility Site Evaluation Council; Scout – Scout Clean Energy, LLC; Tetra Tech – Tetra Tech, Inc.; USFWS – U.S. Fish and Wildlife Service; WDFW – Washington Department of Fish and Wildlife; WEST – Western Ecosystems Technology, Inc.

## 4 HABITAT MAPPING

The Applicant used a combination of field survey data and desktop resources to map habitat within the Project Lease Boundary from 2017 through 2021, as described in Section 3.4.1.1 of the EFSEC ASC (Chatfield and Brown 2018a, 2018b; Tetra Tech 2021a; USFWS 2018; USGS 2016; Yang et al. 2018). Subsequent to submittal of the EFSEC ASC, additional habitat surveys were conducted within portions of the Project Lease Boundary that had not previously been surveyed (Tetra Tech 2021b). In general, habitat types and subtypes were adapted from habitat descriptions in the Wildlife Wind Power Guidelines (WDFW 2009) and *Wildlife-habitat Relationships in Oregon and Washington* (Johnson and O’Neil 2001), with some modifications as described below. Descriptions of habitat types and subtypes mapped within the Project Lease Boundary are provided in Section 3.4.1.1 of the EFSEC ASC as well as the survey reports prepared for the Project (Tetra Tech 2021a, b). Table 2 provides a crosswalk between habitats mapped at the Project and WDFW Habitat Types and Classifications (WDFW 2009).

Vegetation within the majority of the Project Lease Boundary has been degraded due to historical and current agriculture and grazing activity, and non-native invasive grasses and forbs are prevalent throughout the Project Lease Boundary.

**Table 2. Project Habitat Type and Subtype Crosswalk with WDFW Habitat Type and Classification**

Project Habitat Type	Project Habitat Subtype	WDFW Habitat Type	WDFW Classification
Agricultural land		Croplands	Class IV
Developed/disturbed		Urban and Mixed Environs	
Grassland	Eastside (interior) grassland	Eastside (Interior) Grasslands	Class III
	Non-native grassland		
	Planted grassland	Conservation Reserve Program Lands	
Shrubland	Rabbitbrush shrubland	Shrub-steppe	Class II
	Sagebrush shrub-steppe		
	Dwarf shrub-steppe		

Of the eight upland habitat subtypes mapped within the Project Lease Boundary, two were not readily classified into either WDFW (2009) or Johnson and O’Neil (2001) habitat types or subtypes: non-native grassland and rabbitbrush shrubland. Non-native grassland was considered eastside (interior) grassland (Class III) WDFW habitat because these areas were dominated by non-native grassland and forb species. The non-native grasslands mapped at the Project likely provide lower functional value to wildlife than typical eastside (interior) grassland due to the presence of invasive species (e.g., several areas field-mapped as non-native grassland habitat in 2020 consisted of vast areas dominated by dense cover of cereal rye [*Secale cereale*], a Class C noxious weed [BCNWCB 2020; WSNWCB 2020]). Non-native grassland was classified as eastside (interior) grassland because the definition for eastside (interior) grassland in the Wildlife Wind Power Guidelines (WDFW 2009) provided the best fit for classification of this habitat type.

Planted grassland and rabbitbrush shrubland are potentially Conservation Reserve Program (CRP) land because these areas appeared to have been planted with non-native grasses, native grasses, and/or native shrubs in formerly agricultural areas. That would make the habitat value of those areas the functional equivalent of typical CRP lands. Despite that, rabbitbrush shrubland that was observed in areas that appeared to have been planted was included as a Class II habitat type. It is unknown whether rabbitbrush was planted in those areas or established naturally. Rubber rabbitbrush (*Ericameria nauseosa*) is an early seral species that readily colonizes disturbed sites, such as areas disturbed by overgrazing or fire or abandoned agricultural lands (Faber et al. 2013; Tirmenstein 1999; USDA 2017).

Sagebrush shrub-steppe and dwarf shrub-steppe were considered shrub-steppe (Class II) WDFW habitat because they were dominated by native shrubs such as big sagebrush (*Artemisia tridentata*) and rock buckwheat (*Eriogonum sphaerocephalum*). Lithosol soils were not observed in the sagebrush shrub-steppe habitat mapped within the Project Lease Boundary, but were observed within the mapped dwarf shrub-steppe habitat, indicating a likely increased length of time for restoration following disturbance (WDFW 2009).

## 5 PROJECT IMPACTS

### 5.1 Landscape-Level Impacts

The following desktop resources were used to characterize how the Project may affect landscape-scale habitat connectivity and wildlife movement:

- Arid Lands Initiative (ALI) Spatial Conservation Priorities in the Columbia Plateau Ecoregion (ALI 2014);
- Priority Core Areas and Priority Linkage Areas (Great Northern Landscape Conservation Cooperative 2015); and
- Washington Wildlife Habitat Connectivity Working Group (WHCWG) Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion (WHCWG 2012).

Each of these data sources identify landscape-level areas of importance to wildlife in the region, using a combination of data layers and key ecological attributes. These areas are generally described as:

- Priority Core Areas – Set of noncontiguous polygons selected by modeling where local protection and restoration actions can best contribute overall conservation goals (ALI 2014).
- Priority Linkages – Areas within the Columbia Plateau Ecoregion identified as important for maintaining movement opportunities for organisms or ecological processes (e.g., for animals to move to find food, shelter, or access to mates). In the WHCWG (2012) report, these are corridors identified by the models as important for wildlife movement between Habitat Concentration Areas (HCA).
- Linkage Network – System of habitats and areas important for connecting them. For the WHCWG linkage priorities, linkage networks represent the area encompassed by the combination of HCAs and modeled Priority Linkages that connect them (WHCWG 2012).

Connectivity along the east/west ridgeline to the north of the Project and the north/south corridor to the west of Interstate 82 has been avoided or minimized by designing the Project to avoid impacts to Priority Linkages. Along the northern ridgeline, Turbines and associated roads have been set back and do not overlap with Priority Core Areas or High/Very High Linkage Areas (see Figure 1). Spacing between Turbines along a string will be approximately 0.25 mile from the tower base and the perpendicular distance between strings will be much greater (approximately 0.5 to 1 mile), which would maintain open areas of habitat (agriculture, grassland, and shrub-steppe), facilitate wildlife movement, and maintain habitat connectivity. A small portion of the eastern solar array overlaps with, but does not substantially encroach into, a Linkage Area and thus would not impede species movement or habitat connectivity within the Linkage Area.

The two solar arrays located on the west side of the Project area do not overlap with a Priority Core Area or High Linkage Area. Wind turbines and associated infrastructure (with the exception of O&M buildings/substations) will remain unfenced, resulting in reduced habitat fragmentation and facilitate open movement of terrestrial wildlife species. By designing the Project in a manner that avoids or minimizes disturbances in modeled corridor areas, terrestrial wildlife corridors within the Horse Heaven Hills will be maintained.

The Project is not located within a migration route for big game species (WDFW 2020a). Although the Project provides low habitat value to mule deer (due to the extent of agricultural and developed land, which covers 75 percent of the Project Lease Boundary), one Least-Cost Path (LCP) modeled by the WHCWG (2012, 2013) passes through the Project along a north-south route west of and parallel to Highway 395. This LCP connects HCAs at the Hanford Site and Rattlesnake Hills in Washington to an HCA in Oregon between Pendleton and Heppner. This LCP falls outside the Solar Arrays but passes through the Micrositing Corridor. WDFW is currently working to further identify migratory corridors through research of mule deer movement; however, these are currently prioritized in the East Slope Cascades and East Columbia Gorge Mule Deer Management Zones and not the Columbia Plateau Mule Deer Management Zone (WDFW 2020b), where the Project occurs.

As the Project is not located within a migration route for big game species, impacts to big game migration routes are not anticipated from the Project. Although the Micrositing Corridor overlaps with one LCP modeled by WHCWG (2012, 2013), the Project Lease Boundary in general provides low-value habitat to mule deer and is unlikely to support large migrations of mule deer despite this modeled linkage. The modeled LCP that passes through the Project does not overlap with the fenced solar arrays (or the larger Solar Siting Areas), which are primarily located on agricultural and disturbed lands. This LCP is designated as low centrality; centrality is a measure of how important a habitat area or linkage is for keeping the overall connectivity network connected (WHCWG 2013). Therefore, construction and operation of the Project are not anticipated to constitute a barrier to deer movement.

## 5.2 Habitat Impacts

Construction and operation of the Project would result in both permanent and temporary impacts to wildlife habitat, as well as modifications to habitat within the solar array fencelines. Areas of permanent impacts include locations of permanent infrastructure (e.g., Turbines, meteorological towers, BESS, substations, permanent access roads, and O&M facilities), and areas of temporary impacts include locations that would be disturbed during construction and revegetated following construction outside the solar array fencelines (e.g., locations of underground collection and communication lines and temporary construction yards) (see Table 2.1-1 in Section 2 of the EFSEC ASC). Temporary impacts associated with solar facilities include a 10-foot construction buffer along the outside of the solar fencelines. Where not permanently impacted due to permanent infrastructure (i.e., graveled interior access roads, inverter pads, and tracker system support posts), habitat within the solar array fencelines would be revegetated with low-growing vegetation following construction and would remain available to wildlife such as small mammals, birds, reptiles, and invertebrates in a modified condition.

Table 3 provides the estimated acres of impact to wildlife habitat from construction and operation of the Project, including the acres of temporary and permanent impacts within the Micrositing Corridor and Solar Siting Areas, and acres of habitat modification within the Solar Siting Areas.<sup>2</sup> Table 3 conservatively includes the acres of impact to each habitat subtype under Turbine Option 1, which represents the estimated maximum acreage of impact (from the greatest number of Turbines and associated roads and collector lines) and thus would result in the maximum estimated acreage of mitigation (calculated in Section 7.3.1). If Turbine Option 2 is selected, impacts on habitat and thus the mitigation need would be reduced within the Micrositing Corridor. Impacts from the solar arrays and

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<sup>2</sup> Acreages in Table 3 reflect additional habitat mapping conducted for the Project subsequent to submittal of the ASC; therefore, the habitat subtypes and acres of impacts to habitat subtypes in Table 3 do not match Table 3.4-14 of the ASC.

associated infrastructure would not vary based on Turbine options, but would be reduced if one or more of the Solar Siting Areas is not developed.

Table 3 lists the acres of Project impact by impact type and habitat subtype; where these impacts result in the need for mitigation (i.e., outside of agricultural and developed land), these values are again listed in Section 7.3.1 where they are multiplied by their respective mitigation ratios to determine the mitigation need by habitat type and subtype.

The vast majority (79 percent) of habitat proposed to be permanently impacted within the Micrositing Corridor is agricultural land, followed by planted grassland, rabbitbrush shrubland, non-native grassland, sagebrush shrub-steppe, developed/disturbed, eastside (interior) grassland, and dwarf shrub-steppe, (Table 3). The vast majority (84 percent) of habitat proposed to be modified within the solar array fencelines is agricultural land, followed by rabbitbrush shrubland, planted grassland, eastside (interior) grassland, non-native grassland, sagebrush shrub-steppe, and developed/disturbed (Table 3).

Habitat proposed to be impacted within the northern and western Solar Siting Areas is almost entirely agricultural and disturbed land, with small amounts of planted and non-native grassland and sagebrush shrub-steppe, while just over half of the habitat within the eastern Solar Siting Area is agricultural and disturbed land with the remaining habitat consisting of rabbitbrush shrubland, eastside (interior), planted, and non-native grassland, and sagebrush shrub-steppe habitat (e.g., see Figure 5 in Tetra Tech 2021b). Section 7.4 and Table 4 summarize the proposed mitigation acres needed to offset the loss or modification of habitat by the Project.

Renewable energy facilities (i.e., wind and solar) have been built and proposed throughout the Columbia Plateau in Washington, including in Benton County (EFSEC 2021; Erickson et al. 2003; *Yakima Herald* 2019) for decades. Therefore, the Project has the potential to contribute to cumulative impacts on wildlife and habitat. Cumulative impacts are the comprehensive effect on the environment that results from the incremental impact of a project when added to other past, present, and reasonably foreseeable future actions (USFWS 2012). The Project is sited primarily on agricultural land, has minimized impacts to shrub-steppe to the extent feasible, and is sited outside of locations identified as key to the ALI and identified in the WHCWG. As summarized in Section 7.4, unavoidable impacts to habitat (including shrub-steppe habitat) will be mitigated appropriately through either a conservation easement, payment to WDFW, or a payment to a local land trust or conservation organization as discussed with WDFW. Thus, replacement habitat would be provided such that there would be no cumulative loss in function or value of habitat from Project development.

**Table 3. Estimated Impacts on Habitat Types from Construction and Operation of the Project**

Habitat Type	Habitat Subtype	Micrositing Corridor		Solar Siting Areas		
		Temporary Impact (Acres) <sup>1/</sup>	Permanent Impact (Acres) <sup>1/</sup>	Temporary Impact (Acres) <sup>2/</sup>	Permanent Impact (Acres) <sup>2/</sup>	Modified Habitat Impact (Acres) <sup>2/</sup>
Agricultural land		2,269	252	55	237	5,314
Developed/disturbed		21	2	0.01	–	–
Grassland	Eastside (Interior) grassland	15	–	2	5	68
	Non-native grassland	136	11	1	2	23
	Planted grassland	259	21	4	12	204
Shrubland	Dwarf shrub-steppe	9	1	–	–	–
	Rabbitbrush shrubland	141	11	13	38	668
	Sagebrush shrub-steppe	31	1	0.1	–	0.2
<b>Total<sup>3/</sup></b>		<b>2,881</b>	<b>299</b>	<b>76</b>	<b>294</b>	<b>6,276</b>

Notes:

- 1/ Overlapping permanent disturbance is subtracted from temporary impact corridors/areas (e.g., temporary impact area around a Turbine does not include the Turbine foundation and graveled areas); those are included only in the permanent impact column.
- 2/ Temporary impacts associated with solar facilities include a 10-foot construction buffer along the outside of the solar fencelines. Permanent impacts include the solar inverters and new access roads within the solar siting areas. Modified impacts are associated with the solar arrays and include those areas within the solar fencelines that are outside areas of permanent impact. Following construction, low growing vegetation would be planted under and between the solar arrays; therefore, these impacts would be considered a modification of habitat versus a temporary or permanent impact.
- 3/ Totals may not sum exactly due to rounding.

### 5.3 Federal or State Listed Species Impacts

No federally listed species occur in the Project area. There are two state listed species that have been observed either during project-related surveys or as documented in WDFW Priority Habitats and Species (PHS) data: ferruginous hawk (*Buteo regalis*) and Townsend’s ground squirrel (*Urocitellus townsendii*).

#### 5.3.1 Ferruginous Hawk

Surveys conducted in 2017 to 2019 documented nine ferruginous hawk nests within 2 miles of proposed Turbines. The methods and results of those surveys are summarized in Attachment A. Two of the nine nests were occupied at least once during the 3-year survey period; one was also considered active and the other was considered inactive (due to the lack of eggs or young present). The remaining seven nests were unoccupied, in poor condition, and would require substantial repair for nesting. The unoccupied nests were dilapidated and comprised scattered sticks and nest material, which suggests the nests were not used for one or more nesting periods prior to the 2017 surveys.

The linear distance from all nests to the nearest Turbine ranged between 1,115 and 4,708 feet. One of the occupied/active nests is located a linear distance of 2,795 feet (0.53 mile; ground distance 2,806 feet) to Turbine 116 with an elevation difference of 245 feet from nest to the Turbine. The second nest, which was occupied/inactive in 2017, is a linear distance of 4,708 feet (0.89 mile; ground distance 4,743 feet) to Turbine 49 with an elevation difference of approximately 580 feet. More detail about nest locations and topography between Turbines and the nests is provided in Attachment A.

To avoid disturbance to nesting ferruginous hawks and their prey base, WDFW recommends spatial and temporal buffers around active nests (Attachment A; WDFW 2005). Around all active nests, WDFW recommends avoiding human access and ground-based activities within 820 feet of the nest between March 1st and May 30th, and preventing prolonged activities lasting greater than 0.5 hour within 3,280 feet of a nest between March 1 and August 15 (WDFW 2005). The Project would implement those avoidance and minimization criteria as necessary, depending on nest location and status and distance from Project infrastructure. Additional minimization measures are listed in Section 7.2. In addition, a process for assessing the relative impacts on nesting ferruginous hawks from habitat removal or modification by the Project, as well as a mitigation approach to offset these effects, is described in Section 7.4.

### **5.3.2 Townsend's Ground Squirrel**

Based on modeling from the WHCWG (2013) for Townsend's ground squirrel, there are several HCAs surrounding the Project. These HCAs are limited to the escarpment, northwest of the Project Lease Boundary, where Turbines have been excluded, the southcentral portion of the Project Lease Boundary, and areas west of Highway 82 (Figure 2). HCAs were modeled as High and Medium concentration by the WHCWG. Of the 244 proposed Turbine locations, none are located in High concentration areas, but 6 locations (2 percent) are within the Medium concentration area, just west of the eastern solar array. Only a very small portion of the eastern solar array encroaches on an existing (Medium concentration) HCA, and security fencing would be permeable to Townsend's ground squirrel, meaning that ground squirrels would be able to access revegetated habitat within the solar array.

## **6 SCIENTIFIC BASIS**

WDFW (2009) defines permanent impacts to habitat as those impacts that are anticipated to persist and cannot be restored within the life of the Project, which may include "new permanent roads, operations and maintenance facilities, Turbine pads, impervious and/or areas devoid of native vegetation resulting from project operations." Areas that would be revegetated under the solar arrays following construction of the Project would not be impervious, would not be devoid of native vegetation, or otherwise built up, and would be restored within the life of the Project; therefore, these areas are generally not considered permanently impacted habitat. Following completion of construction, areas under the solar arrays would be revegetated with low-growing vegetation (see Appendix N to the EFSEC ASC, the Revegetation and Noxious Weed Management Plan).

A recent study demonstrated that successful revegetation under solar panels is possible, even with native grass species adapted to full-sun conditions (Beatty et al. 2017). This study demonstrated that revegetation under solar panels was able to "achieve ground cover sufficient to control erosion and begin to restore wildlife habitat" (Beatty et al. 2017). A recent study in Oregon (Hassanpour Adeh et al. 2018) quantified changes to the microclimatology, soil moisture, water usage, and biomass productivity due to the presence of solar panels. In this study, areas under photovoltaic (PV) panels maintained higher soil moisture, showed a significant increase in late season biomass (90 percent more biomass), and were significantly more water efficient (328 percent more efficient), although caution should be used in applying these results from west of the Cascade Mountains to the drier Columbia Plateau (Hassanpour Adeh et al. 2018). Hernandez et al. (2020) evaluated the seed bank survival of two desert annual plant congeners, one rare (Barstow woolly sunflower [*Eriophyllum mohavense*]) and one common (Wallace's woolly daisy [*E. wallacei*]) in the Western Mojave Desert and found that seed bank survival across both species was significantly greater in shade (10 percent) microhabitats compared to runoff (5 percent) and control microhabitats (3 percent), possibly related to the shade microhabitats receiving less photosynthetically active radiation and having

lower soil moisture and temperatures. Similarly, pre- and post-construction biological monitoring data at a PV solar facility in California indicated similar to higher vegetation productivity on-site compared to reference sites (Sinha et al. 2018). As a result, areas under solar panels that would be revegetated are generally considered modified rather than temporarily or permanently impacted.

As described above, habitat within the solar array fencelines would remain available to wildlife such as small mammals, birds, reptiles, and invertebrates in a modified condition. Limited research is available regarding the effects of PV array development (including the effects of fencing and shading) on residual wildlife habitat value; however, preliminary studies indicate residual habitat value remains for various species of birds, and the value may differ based on restoration and vegetation management practices. For example, DeVault et al. (2014) studied avian abundance at PV array fields and paired airport grassland areas using transect surveys. The results indicated that airport grasslands generally had greater species diversity and PV arrays generally had more total birds observed; however, overall bird mass was comparable at airport grasslands and PV arrays, suggesting more smaller birds tended to use the PV arrays than the airport grasslands. Similarly, Visser et al. (2018) measured bird abundance and diversity at a PV array facility in South Africa using point counts within and outside the facility. The primary conclusion of the study was that bird diversity and density were higher outside of the facility, but the facility was not absent of birds. Visser et al. (2018) found that the bird community inside the facility comprised birds that were generalist species or those that use grassland habitat. Thus, the species composition appeared to be associated with a change from a shrub/woodland habitat to a grassland habitat within the facility. This limited research demonstrates that while bird species use may change at PV arrays, use of the area is not eliminated; instead, the modified habitat supports a modified avifaunal community.

Similarly, post-construction biological monitoring data at a PV solar facility in California documented the presence of dozens of wildlife species, including California horned lark (*Eremophila alpestris actia*), ferruginous hawk, loggerhead shrike (*Lanius ludovicianus*), prairie falcon, black-tailed jackrabbit, California ground squirrel (*Otospermophilus beecheyi*), San Joaquin kit fox (*Vulpes macrotis mutica*), and coast range fence lizard (*Sceloporus occidentalis bocourti*) (Sinha et al. 2018). This California site was reseeded with native flora species to allow vegetation to grow beneath the solar panels, creating new habitats, providing sources of food for various wildlife species, and providing dust control (Sinha et al. 2018). The results of monitoring indicated that, although solar facility construction activities do involve short-term disturbance, responsibly developed solar facilities can provide shelter, protection, and stable use of land to support biodiversity (Sinha et al. 2018).

## 7 MITIGATION MEASURES

### 7.1 Avoidance and Minimization

The following avoidance and minimization measures were either applied during Project development or are proposed for Project construction and operations:

- To minimize impacts to wildlife, baseline studies were conducted at the Project consistent with the WDFW Wind Power Guidelines (WDFW 2009), the USFWS' 2012 Final Land-Based Wind Energy Guidelines (USFWS 2012), the 2013 USFWS Eagle Conservation Plan Guidance Module 1 – Land Based Wind Energy (USFWS 2013), and the USFWS 2016 Eagle Rule Revision (USFWS 2016). In order to minimize impacts to and avoid wildlife resources, the Applicant used the results of these baseline studies to inform the layout design.

- Project facilities were sited on previously disturbed (e.g., cultivated cropland) areas as feasible to avoid impacts to native habitats and associated wildlife species.
- The Project will use industry standard best management practices to minimize impacts to vegetation, waters, and wildlife.
- To the extent feasible, the solar array fencelines have been designed to enclose smaller solar arrays within the Solar Siting Areas rather than enclosing each entire Solar Siting Area, which will minimize habitat fragmentation and allow wildlife passage through the Solar Siting Areas. Fencing will be designed to be at least 4 inches above ground and will not have razor wire at the top. Consistent with recommended mitigation measure Spec-13 in the Draft Environmental Impact Statement (EFSEC 2022), the fencing will not be barbed wire.
- The Project was sited outside of wetlands and waters to the extent feasible to avoid and minimize impacts to these resources as described in Section 3.3 and Section 3.5 of the EFSEC ASC, which will also avoid impacts to fish and minimize impacts to wildlife species that use these habitats.
- If the final design results in impacts to waters of the state that cannot be avoided, the Applicant will work with EFSEC and WDFW to confirm whether a Hydraulic Project Approval is required, and will prepare an application accordingly.
- During construction, WDFW-recommended seasonal buffers (per Larsen et al. 2004) for ferruginous hawk nests would be observed to avoid disturbing nesting ferruginous hawks.
- Consistent with recommended mitigation measure Spec-4 in the Draft Environmental Impact Statement (EFSEC 2022), during construction, WDFW-recommended seasonal buffers (per Larsen et al. 2004) for burrowing owl nests would be observed to avoid disturbing nesting burrowing owls, if present. If impacts to potentially suitable habitat cannot be avoided during final design, the Applicant will consult with WDFW regarding the need for burrowing owl surveys prior to construction, including surveys to determine habitat suitability for burrowing owls, and surveys for breeding owls if suitable habitat is present.
- The Applicant does not anticipate using pesticides during Project construction or operation; if unforeseen circumstances arise that require the use of pesticides, the Applicant will consult with WDFW and EFSEC regarding use of pesticides to avoid and minimize impacts to burrowing owl (per Larsen et al. 2004).
- The Applicant would minimize bird and bat collision with Project infrastructure by implementing down-shield lighting (e.g., for permanent lighting at the substations and O&M facilities) that will be sited, limited in intensity, and hooded in a manner that prevents the lighting from projecting onto any adjacent properties, roadways, and waterways; lighting will be motion activated where practical (i.e., excluding security lighting);
- All permanent meteorological towers would be designed as free-standing (i.e., un-guyed) to minimize collision risk for wildlife.
- The Applicant would acquire any necessary federal approvals as described in Section 2.23 of the EFSEC ASC. The Applicant will continue ongoing coordination with the USFWS regarding an eagle take permit for incidental take of bald and golden eagles, and will continue to evaluate eagle risk to determine if an eagle take permit is appropriate considering the use of the Project by bald and golden eagles. The Applicant does not plan to pursue an eagle take permit for the anticipated Phase 1 of the Project but will re-evaluate eagle risk and whether there is a need for an eagle take permit for the anticipated Phase 2 of the Project.

- The Applicant will limit construction disturbance by flagging any sensitive areas (e.g., wetlands,) and will conduct ongoing environmental monitoring during construction to ensure flagged areas are avoided.
- The Applicant has prepared a Bird and Bat Conservation Strategy that describes the surveys conducted, avoidance and minimization, and potential impacts to birds and bats and their habitat as a result of construction and operation of the Project (see Appendix M to the EFSEC ASC).
- The Applicant will conduct 2 years of standardized post-construction fatality monitoring to assess impacts of Turbine operation on birds and bats. Proposed post-construction fatality monitoring is described in the Applicant's Bird and Bat Conservation Strategy (Appendix M to the EFSEC ASC).

## **7.2 Ferruginous Hawk Avoidance and Minimization Measures**

As discussed in Section 3.4.3 of the EFSEC ASC as well as in related responses to data requests submitted to the EFSEC, a number of minimization and avoidance measures were implemented early in the Project design phase to reduce impacts to ferruginous hawk and other raptor species. Considerations to the Project design included the following:

- Land leases along the Columbia River with private landowners were dropped from consideration to avoid development in proximity to suitable raptor nesting habitat along the cliffs adjacent to the river.
- In accordance with project-specific guidance provided by WDFW, Turbines nearest to Nest 03 were repositioned to be more than 0.5 mile away from the nest, which exceeded the 0.25-mile setback recommendation (M. Ritter, pers comm).
- Collection lines were co-located along existing roads and proposed access roads to reduce disturbance to raptor foraging habitat and interactions with aboveground electrical lines and poles.
- Project infrastructure was sited in previously disturbed areas to the extent feasible to avoid impacts to suitable ferruginous hawk foraging habitat in shrub-steppe and grassland habitats.
- Overhead electrical infrastructure will conform with Avian Power Line Interaction Committee suggested practices for reducing avian electrocution (APLIC 2006).
- All permanent meteorological towers will be unguyed to minimize collision risk for ferruginous hawks and other raptors.
- Development in and near draws and canyons was minimized to the extent practicable to reduce impacts to suitable raptor foraging and nesting habitat. For example, based on consultations with WDFW and EFSEC, collector lines originally planned to cross Webber and Sheep Canyons will be relocated south to near or above the head of the canyons.
- The Project will implement spatial and seasonal restrictions on ground-disturbing activities during construction, per WDFW recommendations (Larson et al. 2004; WDFW 2005).
- The Project will avoid the application of pesticide and rodenticides during the construction and operation.

## **7.3 Restoration**

As described in the Revegetation and Noxious Weed Management Plan (Appendix N to the EFSEC ASC), temporarily disturbed areas and areas under the solar arrays would be revegetated following completion of construction with native or non-invasive, non-persistent non-native plant species. Example seed mixes

consisting of native species are provided in the Revegetation and Noxious Weed Management Plan. Revegetation would begin as soon as feasible following completion of construction. Seeding would be done in a timely manner and within the appropriate season to facilitate germination. Site preparation, seeding techniques, and example seed mixes are described in the Revegetation and Noxious Weed Management Plan, along with success criteria, monitoring, and reporting. The Revegetation and Noxious Weed Management Plan also provides the methods, monitoring, and reporting associated with preventing the introduction and controlling the spread of noxious weeds from construction and operation of the Project.

## **7.4 Compensatory Mitigation**

After avoidance and minimization measures have been implemented, some impacts to wildlife habitat would remain. This section describes compensatory mitigation proposed to account for the effects of unavoidable impacts to habitat, in compliance with the regulations and guidelines described in Section 2.

### **7.4.1 Habitat Mitigation Calculation**

Table 4 provides the estimated maximum number of acres of each habitat type and subtype proposed to be impacted by the Project under Turbine Option 1 that would result in the need for mitigation (i.e., excluding impacts to agricultural and disturbed land that are shown above in Table 3), and the resulting acres of mitigation needed based on the approach described in this HMP. In Table 4, the acres of impact are multiplied by the appropriate mitigation ratio, depending on impact type and duration as well as habitat subtype, in order to determine the mitigation need by habitat type and subtype. The acreages shown in the table will be revised, once final Project design is known. The temporary and permanent impact mitigation ratios shown in Table 4 are consistent with the WDFW (2009) Wind Power Guidelines because these impact types match the definitions provided in WDFW (2009). The habitat mitigation ratios were developed for modified habitat, through coordination with EFSEC and WDFW, in the absence of solar development guidelines and considering that revegetated habitat under solar arrays does not meet the definition of temporary or permanent impacts from WDFW (2009).

Table 4 summarizes Project impacts by impact type for habitat subtypes that result in the need for mitigation, for the purpose of calculating the maximum mitigation need for the Project. See Table 3 in Section 5.2 for a full tabulation of all Project impacts.

**Table 4. Estimated Project Impacts on Habitat Subtypes and Associated Mitigation Need**

Habitat Type	Habitat Subtype <sup>1/</sup>	WDFW (2009) Classification	Impact (Acres)	Mitigation Ratio <sup>2/</sup>	Mitigation (Acres)
<b>Temporary Impacts Only<sup>3/, 4/, 5/</sup></b>					
Grassland	Eastside (interior) grassland	Class III	16	0.1:1	2
	Non-native grassland		137	0.1:1	14
	Planted grassland		263	0.1:1	26
Shrubland	Rabbitbrush shrubland	Class II	155	0.5:1	78
	Dwarf shrub-steppe		9	1:1	9
	Sagebrush shrub-steppe		32	0.5:1	16
<b>Permanent Impacts Only<sup>3/, 4/</sup></b>					
Grassland	Eastside (interior) grassland	Class III	5	1:1	5
	Non-native grassland		13	1:1	13
	Planted grassland		32	1:1	32
Shrubland	Rabbitbrush shrubland	Class II	49	2:1	98
	Dwarf shrub-steppe		1	2:1	2
	Sagebrush shrub-steppe		1	2:1	2
<b>Modified Habitat Only<sup>4/</sup></b>					
Grassland	Eastside (interior) grassland	Class III	68	0.5:1	34
	Non-native grassland		23	0.5:1	11
	Planted grassland		204	0.5:1	102
Shrubland	Rabbitbrush shrubland	Class II	668	0.5:1	334
<b>Total<sup>6/</sup></b>					<b>779</b>

Notes:

- 1/ Only impacted subtypes that result in the need for mitigation are shown.
- 2/ Temporary and permanent impact mitigation ratios are consistent with the WDFW (2009) Wind Power Guidelines; modified habitat mitigation ratios were developed for this Project in the absence of solar development guidelines and considering revegetated habitat under solar arrays does not meet the definition of temporary or permanent impacts from WDFW (2009).
- 3/ Overlapping permanent disturbance is subtracted from temporary impact areas (e.g., temporary impact area around a Turbine does not include the Turbine foundation and graveled areas); those are included only in the permanent impact calculations.
- 4/ Temporary impacts associated with solar facilities include a 10-foot construction buffer along the outside of the solar fencelines. Permanent impacts include the solar inverters and new access roads within the Solar Siting Areas. Modified impacts include those areas associated with the solar arrays. Following construction, low-growing vegetation would be planted under the solar arrays; therefore, these impacts would be considered a modification of habitat versus a temporary or permanent impact.
- 5/ Per WDFW (2009), for temporary impacts, a reduced mitigation ratio may be considered if restoration results in a higher level of habitat function than pre-project conditions. This reduced ratio may be applied as a credit to subsequent Project phases following determination that revegetated result in a higher level of habitat function compared to pre-Project conditions.
- 6/ Totals may not sum exactly due to rounding.

For most habitat subtypes, the mitigation ratio for modified habitat is less than the replacement ratio for permanent impacts but greater than the ratio for temporary impacts for each habitat subtype given that the function and value of these habitat subtypes will be reduced somewhat following construction of the solar arrays but not eliminated as described in Section 6.0. Therefore, revegetation of areas within the solar array fenceline outside of permanent impact areas (e.g., roads) in combination with the compensatory mitigation will result in no loss of functions and values of habitat overall.

### **7.4.2 Mitigation Siting Criteria**

The total acreage and habitat types needed to offset Project impacts are estimated in Section 7.4.1 and Table 4. That mitigation is intended to offset the impacts from habitat loss or modification, as described in Section 5.2. In order to ensure that the mitigation also adequately addresses potential landscape-level impacts, including those to ferruginous hawk or other PHS species, the location of the mitigation area will be critical. The mitigation siting criteria in this section guided a search for mitigation land that would appropriately offset any loss of function or value to habitat from the Project.

Mitigation for the Project must meet the following criteria:

#### **Criteria 1 – Habitat Mitigation Ratios and Acreages**

Mitigation ratios and acreages shown in Table 4 will be generally met, knowing that at least the following will occur:

- Ratios and acreage for permanent habitat loss will be met.
- Ratios and acreages for temporary loss and habitat modification of habitat classified as Class II will be met.
- All other ratios and acreages are flexible provided that the total acreage is met and any portions of the mitigation area that are Class IV habitat will be enhanced to at least Class III habitat.

#### **Criteria 2 – Ferruginous Hawk Nesting and Foraging Habitat**

Mitigation will address the relative impact that the Project may have on ferruginous hawk nesting and foraging habitat. Removal of foraging habitat within core use areas (~3.2 kilometers/ ~2 miles) and home ranges (~10 kilometers/~6.2 miles) of occupied ferruginous hawk nests will be addressed by completing mitigation similarly within a core use area or home range on an occupied nest. Mitigation actions do not have to be inside the same core use area or home ranges where the habitat loss is occurring, but must be within the core use area or home range of a ferruginous hawk nest that is known to have been active within the last three breeding seasons. When selecting the location of potential mitigation areas, areas of prey concentration or at least habitat that is suitable for prey species will be considered.

#### **Criteria 3 – Landscape Habitat Connectivity**

The Applicant will complete mitigation in a location that meaningfully contributes to landscape-scale habitat connectivity, including, but not limited to, one or more of the following:

- A location deemed important in statewide connectivity and linkage studies such as those completed by the WHCWG and the ALI; or
- A location that is adjacent to other federal, state, or privately protected lands that are managed for conservation purposes, in order to increase the overall size of those protected habitat blocks and create a buffer against unprotected areas; or
- A location that is adjacent to notable landscape features (e.g., ridgelines, draws) that are important for wildlife movement but are not at risk of development, in order to increase the overall size of those protected habitat blocks and create a buffer against unprotected areas.

### **7.4.3 Mitigation Options**

The Applicant proposes three potential mitigation options including (1) acquisition of a conservation easement to protect and enhance a compensatory habitat mitigation area, (2) mitigation fee with WDFW, and (3) payment to provide option with a local land trust or conservation organization, as available. In

addition, the Applicant would also consider alternative mitigation pathways if available in the future. The Applicant may use one option or a combination of options to mitigate for habitat impacts, and will determine the combination of the mitigation options that best correlate to the impacted areas in consultation with WDFW and the affected landowners, subject to EFSEC's approval. The final mitigation approach will offer enough suitable habitat to meet the regulatory requirements described in Section 2. The duration of all three mitigation options will be for the life of the Project.

### **Option 1 – Conservation Easement**

Option 1 may include a conservation easement on habitat that will provide functions and values for native vegetation and wildlife with an emphasis on mitigating those functions and values being impacted by the Project. The actual mitigation acres may be adjusted to account for these functions and values. For example, fewer acres of mitigation land may be required if that land is higher functioning (e.g., provides higher quality habitat, supports WDFW priority species) relative to the Project site or provides a beneficial expansion of high-value habitat (e.g., adjacent to existing or assumed future protected land).

The mitigation areas may be onsite (i.e., within the Project Lease Boundary). For example, areas of sagebrush shrub-steppe and grassland initially proposed for Turbine locations have been avoided in the current layout, including areas of sagebrush shrub-steppe habitat subtype that were avoided due to their designation as WDFW PHS locations and critical areas (e.g., see Figures 3.4-1 and 3.4-4 of the EFSEC ASC). Sufficient acreage of like-kind habitat may be available within the Project Lease Boundary to mitigate for Project impacts and achieve no loss of habitat functions and values. This option would meet the criteria for replacement habitat outlined by WDFW (2009), including that it is like-kind, would be given legal protection as well as protection from degradation for the life of the Project, is in the same geographical region as the impacted habitat, and is at some risk of development given the wind resource at these locations that resulted in the preliminary design of the Turbine arrays.

If Option 1 is pursued, potential enhancements to provide habitat uplift may be appropriate depending on the mitigation area selected for conservation easement; enhancements could include weed control, seeding, planting, and/or other appropriate measures to ensure habitat functions and values are improved over time. The mitigation area could be managed by the Applicant or a designated conservation partner to ensure the habitat is protected from degradation for the life of the Project.

### **Option 2 – Mitigation Payment to WDFW**

Option 2 is based on the mitigation “by fee” option outlined in WDFW (2009), which states that the wind project developer, the permitting authority, and WDFW can identify an appropriate annual fee for the life of the Project to mitigate the Project's impacts on habitat. Alternatively, a “lump-sum” upfront payment could be applied in lieu of annual fees and be determined by the number of acres of impact taking into consideration the duration of impact. The fee (annual or lump sum) would be determined by estimating the cost of placing a conservation easement and managing the mitigation area, as described in Option 1, over a number of acres and in a location sufficient to meet the mitigation ratios and other criteria summarized in Sections 7.4.1 and 7.4.2. Effectively, the fee would be the equivalent of the cost to acquire an easement and manage the conservation easement acres (Table 4) for the duration of the Project.

The payment would be used primarily to support “stewardship” (management, monitoring, restoration, protection from degradation [WDFW 2009]) of high-value habitat in the same ecological region as the Project. The stewardship funds could be applied to strategically important habitat acquired by WDFW throughout Washington. The annual fees or lump sum payment could be deposited into a dedicated WDFW account and may also be used for acquisition. The payment could be calculated by determining

the cost per acre of obtaining a conservation easement and multiplying this by the acres of mitigation needed; the resulting value would be a payment amount equivalent to the cost of mitigating via a conservation easement. The determined cost per acre of a conservation easement may also take into consideration the cost of habitat enhancements, and maintenance and monitoring costs for the life of the Project.

### **Option 3 – Mitigation Payment to Local Conservation Entity**

Option 3 may include a payment to a local land trust or conservation organization (e.g., Friends of Badger Mountain, Tapteal Greenway [Land Trust Alliance 2021; Ritter 2021]) and/or local tribes (i.e., Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and the Wanapum Tribe) to support an ongoing or planned conservation project that benefits the types of habitats impacted by the Project. The identification of potential locations for mitigation in this option may consider areas identified for conservation and/or restoration by local tribes. The payment amount would be determined using similar methods as described for Option 2 (mitigation fee with WDFW), and could be used towards the acquisition and conservation of a property of the size described above to meet the Project mitigation need, or could be used to provide uplift to a larger area and/or at an existing conservation easement. The payment amount would be derived as described under Option 2, based on the acreage estimated in Option 1. The conservation project would be determined through coordination between the Applicant, EFSEC, WDFW, and the land trust or conservation organization or tribe.

Prior to construction, the Applicant would update or supplement this HMP to identify the selected mitigation option based on coordination with stakeholders, availability of mitigation opportunities, and the final layout and final habitat mapping, which will affect the quantity and habitat subtypes of impacted areas and thus the mitigation need. Additional details to be provided include a description of the baseline conditions at the mitigation area(s), including maps, mitigation measures (e.g., noxious weed control), and a description of how these mitigation measures have taken into consideration the probability of success, and ongoing management practices that will protect habitat and species, including a maintenance program.

#### **7.4.4 Proposed Easement Area to Fulfill Mitigation Option 1**

The Applicant has acquired an option for a conservation easement for up to 779 acres of habitat within an approximately 802-acre area in the northeastern corner of the Project Lease Boundary (Figure 3). The easement area straddles South Finley Road in an area initially proposed for wind turbine generator locations but has since been removed from Turbine siting consideration, and the Project has subsequently been designed to avoid impacts in this area. The portion of this easement area northeast of South Finley Road encompasses a predominant hill called The Butte, which contains relatively steep topography compared to the surrounding area.

This easement area meets the criteria for replacement habitat outlined by WDFW (2009), including that it is like-kind, would be given legal protection as well as protection from degradation for the life of the Project, is in the same geographical region as the impacted habitat, and is at some risk of development given that the wind resources in this area are high and it is in the Project Lease Boundary.

The easement area also meets the habitat mitigation ratios and acreages, protects ferruginous hawk foraging habitat, and includes a ridgeline location modeled as a wildlife linkage area by the WHCWG. More specifically the easement area meets the Mitigation Siting Criteria outlined in Section 7.4.2 in the following ways:

### **Criteria 1 – Habitat Mitigation Ratios and Acreages**

The following four habitat subtypes were documented within the easement area:

- Agricultural land
- Developed/disturbed
- Non-native grassland
- Sagebrush shrub-steppe

Table 5 provides the acres, and Figure 3 provides the locations of each habitat subtype mapped within the easement area; however, note that the extent of the final easement area may be adjusted based on ongoing WDFW and landowner negotiations. Photos of the area can be found in Attachment B.

Habitat quality for three of these habitat subtypes (i.e., agricultural land, developed/disturbed, and non-native grassland) was determined to be low based on 1) the lack of vegetation (e.g., developed lands), 2) the low cover of native species, and/or 3) the high cover of non-native species. Habitat quality for sagebrush shrub-steppe within the easement area ranged from relatively low to relatively moderate-to-high quality, based on the relative abundance of big sagebrush and other shrubs (e.g., rabbitbrush), the abundance of non-native species (e.g., cereal rye and cheatgrass), as well as the size of contiguous sagebrush shrub-steppe habitat. Habitat quality of sagebrush shrub-steppe habitat was observed to be relatively moderate-to-high quality in the northeastern and central portion of the easement area due to the relatively high abundance of sagebrush (approximately 20 to 50 percent cover), relatively low cover of non-native species (less than 50 percent cover), and the large size of the contiguous patch of sagebrush shrub-steppe habitat. Habitat quality of sagebrush shrub-steppe habitat was observed to be relatively low in the western portion of the easement area due to the relatively low abundance of sagebrush (approximately 5 percent cover) and relatively high abundance (greater than 50 percent cover) of non-native grasses and forbs.

Table 4 (in Section 7.4.1) outlines the mitigation ratios and acres needed to offset the loss of functions and values for each impact type and habitat subtype. Table 5 summarizes the mitigation need and illustrates the actual mitigation acreage that will be realized in the easement area.

**Table 5. Acres of Each Habitat Type Mapped within the Easement Area Compared to Mitigation Need**

Habitat Type	Habitat Subtype	WDFW (2009) Habitat Classification	Mitigation Acres Needed	Mitigation Acres in Easement Area
Grassland	Eastside Interior Grassland	I	41	0
	Nonnative Grassland		38	1
	Planted Grassland		160	0
Shrubland	Rabbitbrush shrubland	II	510	0
	Dwarf shrub-steppe		11	0
	Sagebrush shrub-steppe		18	678
Disturbed	Agricultural land	IV	0	109
	Developed/disturbed		0	14
<b>Total<sup>1/</sup></b>			<b>779</b>	<b>802</b>

<sup>1/</sup>Total may not sum exactly due to rounding error.

The habitat that is being lost or modified by Project-related activities comprises primarily rabbitbrush shrubland (66%) and planted grassland (21%). The mitigation of that habitat loss or modification, by the protection of much more ecologically valuable sagebrush shrub-steppe habitat, provides a tangible conservation lift. Those areas will be further enhanced through management of noxious weeds, particularly around access points and around the edges where adjacent land uses may create points of infestation. The easement area also includes over 100 acres of agricultural land that presents an opportunity for additional revegetation to a more native land cover type, which would further increase the ecological value. Because the easement area has a high proportion of sagebrush shrub-steppe, it meets the terms outlined in Mitigation Criteria 1 in Section 7.4.2, effectively mitigating the loss of rabbitbrush shrubland and planted grassland with sagebrush shrub-steppe habitat.

**Criteria 2 – Ferruginous Hawk Nesting and Foraging Areas**

A historical ferruginous hawk nest is located on the southern edge of the easement area (Figure 4). It was last documented as active in 1986. At least one other ferruginous hawk nest is within 10 miles of the easement area (see Figure 1 in Attachment A). Since the easement area is primarily sagebrush shrub-steppe habitat, it provides suitable foraging habitat for ferruginous hawk and other raptor species using the northwest-southeast ridgeline. The location of the easement area on the ridgeline increases its value as raptor foraging habitat and makes it more likely that ferruginous hawks, and potentially other raptors, would nest there in the future.

**Criteria 3 – Landscape Habitat Connectivity**

The WHCWG modeled a Priority Linkage Area with medium linkage centrality through nearly the entirety of the easement area (ALI 2014; Great Northern Landscape Conservation Cooperative 2015; Figure 4). The easement area is approximately 10 miles east of a least-cost pathway for mule deer. Based on WHCWG habitat models, habitat quality within the easement area is moderate to high for mule deer (WHCWG 2012). The easement area is approximately 6 miles northeast of an HCA for Townsend’s ground squirrel, which is located south of the Project (Figure 2). Habitat quality within the easement area

is primarily high for Townsend's ground squirrel, with some areas of low and moderate quality habitat (WHCWG 2012).

In addition to its location within a modeled linkage area, the easement area is located on a notable ridgeline. This is the primary reason the location is modeled as a movement corridor for wildlife by the WHCWG. Inclusion of the ridgeline increases the ecological value of the easement area for that reason.

#### **7.4.5 Fee-simple Contribution to Local Organization**

To align with Option 3, in 2021 Scout Clean Energy made a \$25,000 donation to Friends of Badger Mountain for the purpose of conserving land on Little Badger Mountain and Candy Mountain, to further the Ridges to River initiative to protect regional natural resources and provide access to the public. The \$25,000 dollar donation facilitated an additional \$25,000 matching gift from Challenge Match and a \$4,000 match gift from CoBank. Collectively the \$54,000 was pooled and used to purchase land that includes shrub-steppe habitat. Lands purchased and protected in perpetuity provide habitat for the species that reside in Horse Heaven Project region. Ongoing enhancement and management by Friends of Badger Mountain will ensure that habitat quality is improved over time.

#### **7.4.6 Implementation Schedule**

This HMP would be implemented concurrently with Project construction and continue through the life of the Project. Prior to construction, the Applicant would provide documentation of the conservation easement. During construction, the Applicant would initiate baseline surveys to inform any mitigation treatments (e.g., noxious weed control, seeding, etc.). Prior to operation, the Applicant would initiate any mitigation treatments, which could continue, as needed, through Project operation.

### **7.5 Voluntary Mitigation Measures**

#### **7.5.1 Ferruginous Hawk Artificial Nesting Platforms**

The Applicant has voluntarily proposed to install and monitor up to 10 artificial nesting platforms (nesting platform) to mitigate for the potential direct and indirect effects from Project operation on ferruginous hawks. Nest platforms have been demonstrated as an effective mitigation and habitat enhancement tool that provide supplemental nesting substrates in areas where nests have been destroyed or substrates were not available (Tigner et al. 1996; Wallace et al. 2016). Successful nesting has occurred at nesting platforms throughout eastern Washington that were installed by WDFW and the Washington Department of Transportation to enhance nesting opportunities (Hayes and Watson 2021). Long-term ferruginous hawk population trends in Washington have been shown to benefit from the use of nesting platforms in population viability simulations (Jansen and Swanson 2022). The Applicant is currently identifying potential candidate sites to install nesting platforms. Candidate sites will be selected that maximize the potential for nest occupancy and will consider the following coarse-scale site selection criteria (Migaj et al. 2011):

- $\geq 50\%$  shrub-steppe / grassland land cover within 3.2 kilometers (km) of the center of the parcel,
- $\geq 5$  km from proposed Project Turbines and operational turbines,
- $\geq 1$  km from primary or secondary paved roads,
- $\geq 800$  meters from historical nests,
- $\geq 400$  meters from lakes and ponds or other perennial water sources, and
- $\geq$  medium relative probability of nest site selection.

Once potential candidate sites are identified, final site selection will be coordinated with the landowners and in consultation with WDFW.

## **8 MONITORING AND REPORTING**

### **8.1 Conservation Easement**

For Option 1 (Conservation Easement), the Applicant would hire a qualified investigator (botanist, wildlife biologist, or revegetation specialist) to conduct a comprehensive monitoring program for the mitigation area, as appropriate. For Option 2 (Mitigation Fee with WDFW), the annual or lump-sum fee would cover the costs for WDFW to monitor and report, as needed, on stewardship activities. For Option 3 (Mitigation Payment to Local Conservation Entity), part of the payment would fund a stewardship endowment that would cover costs for the land trust, conservation organization, or tribe to monitor and report on how they have implemented the funding to meet the mitigation needs of the Project. The purpose of this monitoring is to evaluate on an ongoing basis the protection of the habitat quality and the results of any habitat enhancements.

For Option 1, the investigator would monitor the habitat mitigation area for the life of the Project beginning in the year following the initial planting/seeding as applicable. Monitoring would occur annually during the first 5 years following initial treatment, as applicable, then occur every 2 years until year 10 (i.e., in years 7 and 9), then every 5 years thereafter. The Applicant would identify appropriate monitoring actions for the Conservation Easement and any habitat treatments that are implemented in consultation with WDFW. Depending upon specific habitat treatments implemented, the investigator may carry out the following monitoring procedures:

1. Assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria (see Section 9 of this HMP);
2. Record environmental factors (such as precipitation at the time of surveys and precipitation levels for the year);
3. Record any wildfire that occurs within the mitigation area and any remedial actions taken to restore habitat quality in the damaged area;
4. Assess the success of the weed control program and recommend remedial action, if needed; and
5. Assess the survival rate and growth of any planted/seeded species.

The investigator would visit identified monitoring locations within planted areas, as applicable. The mitigation area would be compared to baseline conditions to determine the success of any treatments, and may also be compared to reference sites at the Project to demonstrate how the mitigation achieves equivalent or greater habitat quality than the areas impacted. Prior to construction and after the mitigation option(s) has been selected, the Applicant would update or supplement this HMP to include additional monitoring details such as monitoring locations as applicable.

### **8.2 Ferruginous Hawk Artificial Nesting Platforms**

Similar to monitoring at the committed easement areas, the Applicant would hire a qualified investigator to conduct effectiveness monitoring at nesting platforms, as appropriate. The objective of monitoring would be to document the annual nest status of nesting platforms and whether any maintenance issues or other corrective measures are needed. To determine the success of ferruginous hawk nesting attempts, each nesting platform would be monitored three times annually, spaced evenly apart during the nesting

period between April 1st and August 1st. Survey frequency is intended to document the range of potential nesting activity in a particular year, including territory occupancy and nesting status per USFWS (2013) criteria. The nesting platform would be observed with binoculars or a spotting scope from a minimum distance of 200 m and limited to less than 30 minutes to avoid disturbing nesting hawks. This assumes that direct observation of the nest contents, or at least any adult or young at the nest, will be possible. Whether the nesting platform is being occupied by a ferruginous hawk, other bird species, or is inactive would be recorded per methods outlined in Pagel et al. (2010). Maintenance issues would be identified during each monitoring year and corrective action(s) would be identified, depending on the condition of the nesting platform. The interval and duration of annual monitoring will be every year for 3 years following the installation of nesting platforms and every 5 years thereafter for the life of the Project. Results of the monitoring efforts will be summarized and submitted to the Technical Advisory Committee and EFSEC after each monitoring year.

## **9 SUCCESS CRITERIA**

Ultimately mitigation must achieve no loss of functions and values of fish and wildlife habitat. This will be demonstrated by tracking the quantity and quality of mitigation provided for the duration of the Project, relative to the quantity and quality of habitat lost during Project construction and operations. Mitigation for the quantity of habitat impacts of the Project will be considered successful if the Applicant documents, through monitoring and reporting, the protection and enhancement of sufficient habitat to meet the habitat replacement requirements as described in Sections 2 and 7.4.1. For Options 2 and 3, mitigation would be considered successful if the Applicant provided adequate funding for WDFW or a third-party conservation organization to protect and manage sufficient habitat to meet the habitat replacement requirements described in Sections 2 and 7.4.

Quality of habitat in all committed easement areas will be measured relative to habitat conditions at the Project site, prior to construction, and relative to baseline conditions in the mitigation area. If habitat quality in the mitigation area is higher than that being lost at the Project site, the Applicant will at least maintain the habitat condition for the duration of the Project. If the habitat condition in the mitigation area is the same or lower than the Project site, the Applicant will enhance the habitat in the mitigation area so that the habitat quality exceeds that at the Project site. Success criteria for nesting platforms would include maintaining the platforms in a condition that provides the opportunity for ferruginous hawk to occupy the platform. Annual monitoring of the platforms would ensure the condition of the platforms is maintained as functional nesting substrates.

In all cases, the Applicant may choose to use, for comparison, an agreed upon reference site to establish what is ecologically possible in the region. This will help account for variability in the timing and amount of precipitation, average winter and summer temperature, and other localized factors that influence habitat conditions over time.

## 10 WASHINGTON ADMINISTRATIVE CODE COMPLIANCE

Compliance with the WAC is shown in Table 6.

**Table 6. Washington Administrative Code 463-60-332(3) Requirements Matrix**

Requirement	Section(s) where addressed
(3) Mitigation plan. The application shall include a detailed discussion of mitigation measures, including avoidance, minimization of impacts, and mitigation through compensation or preservation and restoration of existing habitats and species, proposed to compensate for the impacts that have been identified. The mitigation plan shall also:	Entire
(a) Be based on sound science	Throughout (e.g., see Sections 6.0 and 7.4.1)
(b) Address all best management practices to be employed and setbacks to be established	Sections 7.1 and 7.2
(c) Address how cumulative impacts associated with the energy facility will be avoided or minimized	Sections 5.2 and 7.4
(d) Demonstrate how the mitigation measures will achieve equivalent or greater habitat quality, value and function for those habitats being impacted, as well as for habitats being enhanced, created or protected through mitigation actions	Sections 5.0 and 7.4
(e) Identify and quantify level of compensation for impacts to, or losses of, existing species due to project impacts and mitigation measures, including benefits that would occur to existing and new species due to implementation of the mitigation measures;	Sections 7.4.1 through 7.4.3
(f) Address how mitigation measures considered have taken into consideration the probability of success of full and adequate implementation of the mitigation plan	Section 7.0
(g) Identify future use of any manmade ponds or structures created through construction and operation of the facility or associated mitigation measures, and associated beneficial or detrimental impacts to habitats, fish and wildlife	Not Applicable
(h) Discuss the schedule for implementation of the mitigation plan, prior to, during, and post construction and operation	7.4.4
(i) Discuss ongoing management practices that will protect habitat and species, including proposed monitoring and maintenance programs	Sections 7.3, 7.4.3, and 8.0
(j) Mitigation plans should give priority to proven mitigation methods. Experimental mitigation techniques and mitigation banking may be considered by the council on a case-by-case basis. Proposals for experimental mitigation techniques and mitigation banking must be supported with analyses demonstrating that compensation will meet or exceed requirements giving consideration to the uncertainty of experimental techniques, and that banking credits meet all applicable state requirements.	Not Applicable

## 11 REFERENCES

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## FIGURES

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# Horse Heaven Wind Project



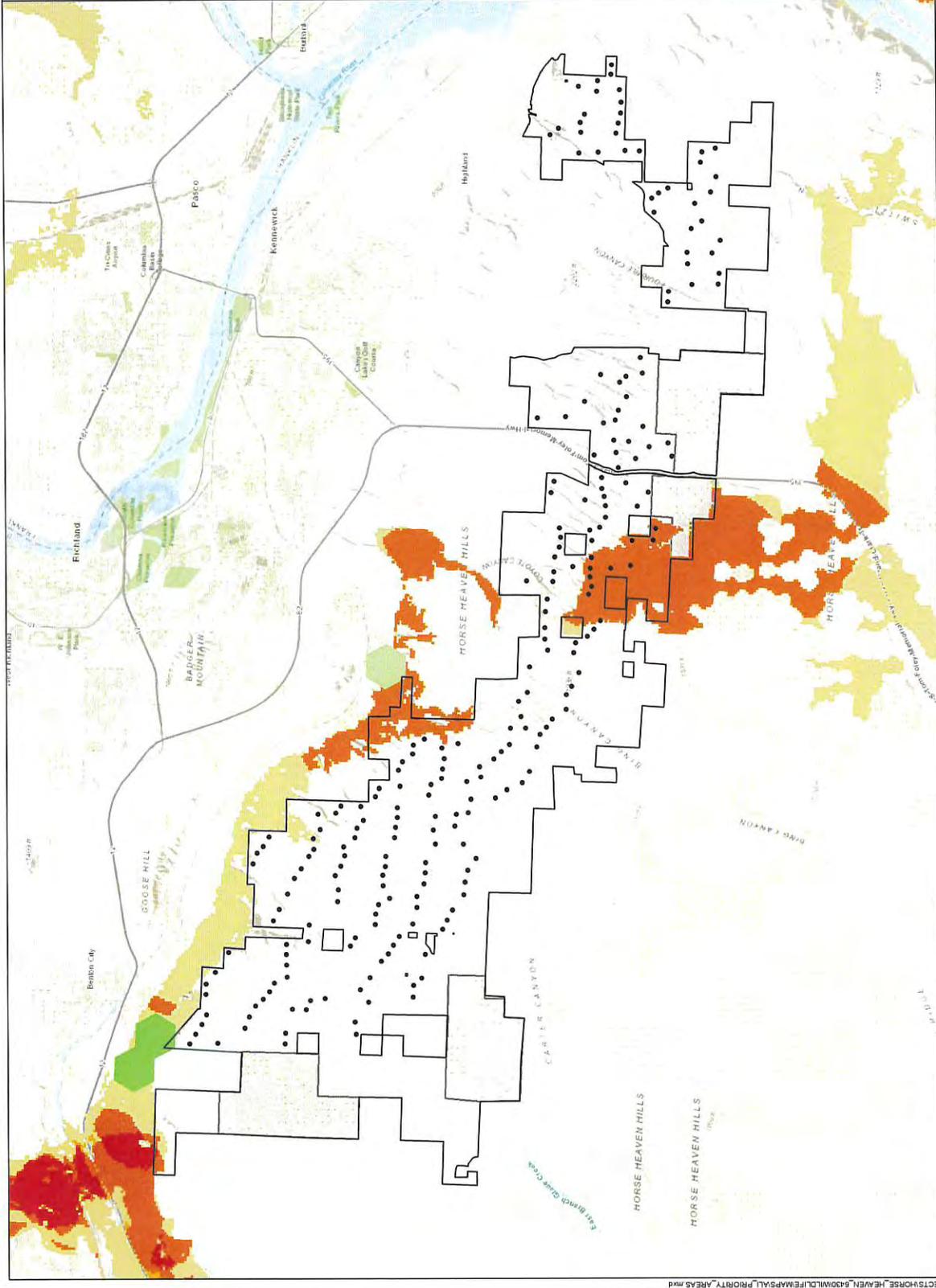
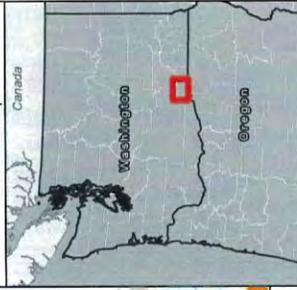
**Figure 1**  
**ALI Shared Priority Area**  
**Model Results**  
 BENTON COUNTY, WA

- Option 1 Turbine Layout
  - ▭ Project Lease Boundary
  - ▭ Solar Siting
- Priority Core**  
 Contribution of Priority Area to under-represented Targets
- Low
  - Medium-low
- WHCWG Linkages**  
 Linkage Centrality Cumulative Rating
- High Linkage Centrality
  - Very High Linkage Centrality
- Number of Overlapping WHCWG Focal Species Networks**
- 4-5 Overlapping Focal Species Networks
  - 6-9 Overlapping Focal Species Networks

NOTE: Turbine Layout Option 1 is provided as submitted with Application for Site Certification (February 2021). Infrastructure locations subject to change pending ongoing discussions with EPSC.



Reference Map



NOT FOR CONSTRUCTION

0 0.5 1 2 3 4 Miles

1:140,000 WGS 1984 UTM Zone 11N

**Horse Heaven Wind Project**



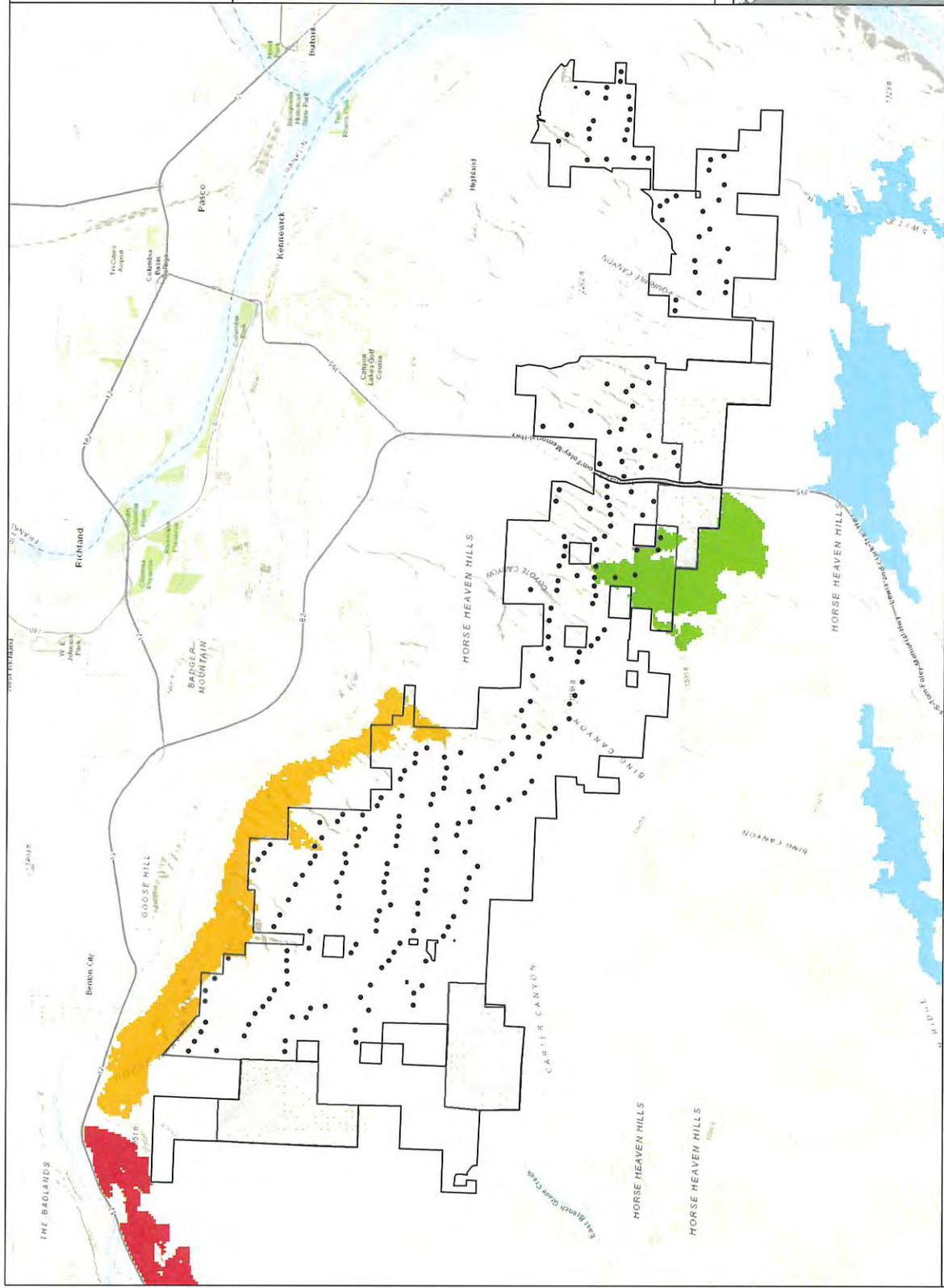
**Figure 2**  
**Townsend's Ground Squirrel**  
**Habitat Concentration Areas**  
**as Modeled by the WHCWG**  
 BENTON COUNTY, WA

- Option 1 Turbine Layout
  - Project Lease Boundary
  - Solar Siting Area
- Habitat Concentration Area**
- Highest
  - Very High
  - High
  - Medium
  - Low

NOTE: Turbine Layout Option 1 is provided as an illustrative example of a potential layout. Final turbine locations are subject to (February 2024) infrastructure decisions and change pending ongoing discussions with EFSEC.



Reference Map



NOT FOR CONSTRUCTION



1:140,000 WGS 1984 UTM Zone 11N

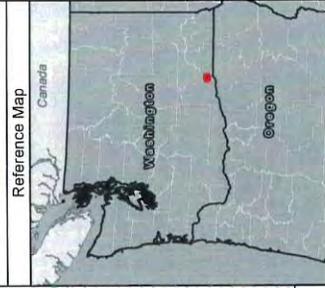
Horse Heaven  
Wind Project



Figure 3  
Mitigation Easement Area  
BENTON COUNTY, WA

- Proposed Turbine
- ▭ Project Lease Boundary
- ▭ Mitigation Area Boundary
- ▭ Permanent Impact
- ▭ Temporary Impact
- ▭ Priority Habitats
- ▭ Shrub-steppe (PHS 2020)
- ▭ Site Reconnaissance Habitat Types
- ▭ Agriculture
- ▭ Developed
- ▭ Non-native grassland
- ▭ Sagebrush shrub-steppe

NOTE: Project data displayed on this map is preliminary pending additional design review.



NOT FOR CONSTRUCTION



1:18,000 WGS 1984 UTM Zone 11N

*Figure 4 contains confidential information and is being provided under separate cover.*

**ATTACHMENT A  
FERRUGINOUS HAWK NESTS AND DISTANCES  
TO PROJECT INFRASTRUCTURE**

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ENVIRONMENTAL & STATISTICAL CONSULTANTS

2725 NW Walnut Blvd., Corvallis, OR 97330

Phone: 541-230-1790 • www.west-inc.com • Fax: 307-637-6981

**DATE:** November 23, 2021  
**TO:** David Kobus, Senior Project Manager, Scout Clean Energy  
**FROM:** Erik Jansen, Wildlife Biologist, Western EcoSystems Technology, Inc.  
**RE:** WDFW Data Request for Ferruginous Hawk Nests and Distances to Project Infrastructure Received From the Washington Energy Facility Site Evaluation Council on November 18, 2021.

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### Objective

The objective of the assessment was to measure the distance from the nearest Wind Turbine (Turbine) or access road to the nearest ferruginous hawk nest identified during 2017–2019 raptor nest surveys located within 2-miles of the Horse Heaven Clean Energy Center (HHCEC or Project), Benton County, Washington. This assessment also outlines minimization and avoidance measures as described in the Project's Application for Site Certification (ASC) that have been implemented in the Project design to minimize impacts to ferruginous hawk and other nesting raptors.

### Methods

Using the Turbine and road layout submitted in the HHCEC ASC, the linear and ground distance from a ferruginous hawk nest to the nearest Turbine or road was measured in Google Earth. The linear distance is defined as the straight-line distance whereas the ground distance accounts for changes in topography. Elevation (above sea level) for both nest and nearest Turbine/road were calculated in Google Earth.

WEST included all occupied and unoccupied ferruginous hawk nests documented during 2017–2019 aerial surveys and located within two miles of the currently proposed Turbines or roads. Survey methods are described in the technical reports (Jansen 2017, Jansen and Brown 2018, Chatfield 2019a-b, Jansen et al. 2019).

WEST categorized territory occupancy and nest status using definitions originally proposed by Postupalsky (1974) and largely followed today (USFWS 2013). Nests were classified as occupied if any of the following were observed at the nest structure: (1) an adult in an incubating position; (2) eggs; (3) nestlings or fledglings; (4) presence of an adult (sometimes sub-adults); (5) a newly constructed or refurbished stick nest in the area where territorial behavior of a raptor had been observed earlier in the breeding season; or (6) a recently repaired nest with fresh sticks (clean breaks) or fresh boughs on top, and/or droppings and/or molted feathers on its rim or underneath. Occupied nests were further classified as active if an egg (s) or young were observed or an adult was clearly in an incubating position. Nests were classified as inactive if no eggs or young were present. Nests not meeting the above criteria for "Occupied" during at least two consecutive surveys were classified as "Unoccupied."

Although the majority of the nests were unoccupied during the three survey years, ferruginous hawks typically construct robust stick nests on the ground or rock outcroppings that can be differentiated from other raptor species. The robust construction and nest location on the ground results in long persistence times of the nest on the landscape, even when the nest has been unoccupied for many years. To assist in determining territory occupancy and nesting status, the nest condition was classified as good, fair or poor which was defined as: good = in excellent condition with very well-defined bowl, no sagging, possible to use immediately or currently in use; fair = in generally good condition with fairly well-defined bowl, minor sagging, may require some repair or addition to use immediately; and poor = dilapidated nest that is sloughing or sagging and would require substantial rebuilding to be usable during the nesting period (Appendix A).

## **Results**

Surveys conducted in 2017–2019 documented nine ferruginous hawk nests within 2 miles of proposed Turbines (Table 1). Two of the nine nests (Nest 03 and Nest 08) were occupied at least once during the three-year survey period (Figure 1 and Figure 2). Nest 03 had an adult sitting in the nest incubating or contained eggs during the second aerial survey during all three-survey years. Nest 08 had an adult standing on the rim of the nest during the first aerial survey in 2017, which suggests territory occupancy, but follow-up surveys in 2017–2019 resulted in no sign of active nesting or nest tending. The remaining seven nests were in poor condition and would require substantial repair for nesting. The inactive nests were dilapidated and comprised of scattered sticks and nest material, which suggests the nests were not used for one or more nesting periods prior to 2017 surveys.

The linear distance from all nests to the nearest Turbine ranged between 1,115 – 4,708 feet (ft). The occupied/active Nest 03 is located a linear distance of 2,795 ft (0.53 mi; ground distance 2,806 ft) to Turbine 116 with an elevation difference of 245 ft from nest to the Turbine. The sloping topography between Nest 03, which is in a tree located at the bottom of Coyote Canyon, and Turbine 116, which is located on the adjacent ridge to the southwest, reduces but not eliminates the line-of-sight from the nest to the proposed Turbine (Figure 3). Nest 08 which was occupied/inactive in 2017 is located a linear distance of 4,708 ft (0.89 mi; ground distance 4,743 ft) to Turbine 49 with an elevation difference of approximately 580 feet. The nest is located on a steep, southeast facing cliff within Badger Canyon that obstructs the line-of sight to Project infrastructure located to the west (Figure 4). The nest (Nest 10) nearest to a Turbine, was unoccupied and inactive and in poor condition during all survey years (Table 1). In all cases, roads were located further away from the nest than Turbines.

To avoid disturbance to nesting ferruginous hawks and their prey base, the Washington Department of Fish and Wildlife (WDFW) recommends spatial and temporal buffers around active nests (Appendix B; WDFW 2005). Around all active nests, WDFW recommends avoiding human access and ground-based activities within 820 ft of the nest between March 1 – May 30, and preventing prolonged activities lasting greater than 0.5 hrs within 3,280 ft of a nest between March 1 – August 15 (WDFW 2005). Based on the nesting status of Nest 03, ground-disturbing activities lasting greater than 0.5 hrs should be prevented within 3,280 ft of the nest between March 1 – August 15; affecting construction activity around proposed Turbine 116 (Figure 3). Nest 08 is

located greater than the maximum disturbance buffer from Turbine 49 and other proposed infrastructure.

As discussed in Section 3.4.3 of the Project ASC as well as in related responses to data requests submitted to the Energy Facility Site Evaluation Council (EFSEC), a number of minimization and avoidance measures were implemented early in the Project design phase to reduce impacts to ferruginous hawk and other raptor species. Considerations to the Project design included:

- Land leases along the Columbia River with private landowners were dropped from consideration to avoid development in proximity to suitable raptor nesting habitat along the cliffs adjacent to the River.
- In accordance with guidance provided by WDFW, Turbines nearest to Nest 03 were repositioned more than 0.5 miles away from the nest, which exceeded the 0.25 mile set-back recommendation (M. Ritter, pers comm).
- Collection lines were co-located along existing roads and proposed access roads to reduce disturbance to raptor foraging habitat and interactions with aboveground electrical lines and poles.
- Project infrastructure was sited in previously disturbed areas to the extent feasible to avoid impacts to suitable ferruginous hawk foraging habitat in shrub-scrub and grassland habitats.
- Overhead electrical infrastructure will conform with Avian Power Line Interaction Committee suggested practices for reducing avian electrocution (APLIC 2006).
- All permanent meteorological towers will be unguyed to minimize collision risk for ferruginous hawks and other raptors.
- Development in and near draws and canyons was minimized to the extent practicable to reduce impacts to suitable raptor foraging and nesting habitat.
- The Project will implement spatial and seasonal restrictions on ground disturbing activities, per WDFW recommendations (Larson et al. 2004, WDFW 2005).
- The Project will avoid the application of pesticide and rodenticides during the construction and operation of the HHCEC (WDFW 2005).

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<https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>
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**Table 1. Status of ferruginous hawk nests and distance to nearest disturbance within 2-miles\* of the Horse Heaven Clean Energy Center, Benton County, Washington.**

Nest ID	Territory Occupancy / Nest Status	2019 Nest Condition	Distance to Turbine (ft)	Closest Turbine #	Landscape Context
03	2017: Occupied / Active <sup>1</sup> 2018: Occupied / Active 2019: Occupied / Active	Good	Linear: 2,795 Ground: 2,806	116	Tree nest along Coyote Creek Rd. Nest Elevation: 1,366 ft Turb Elevation: 1,611 ft
08	2017: Occupied / Inactive <sup>2</sup> 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Good	Linear: 4,708 Ground: 4,743	49	Badger Canyon Nest Elevation: 1,162 ft Turb Elevation: 1,745 ft
10	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 1,115 Ground: 1,127	19	Sheep Canyon Nest Elevation: 1,379 ft Turb Elevation: 1,541 ft
11	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 4,621 Ground: 4,635	18	Sheep County Nest Elevation: 994 ft Turb Elevation: 1,346 ft
13	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 2,266 Ground: 2,278	05	Unnamed Canyon; nest fragments Nest Elevation: 895 ft Turb Elevation: 1,115 ft
15	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 4,082 Ground: 4,083	05	Webber Canyon Nest Elevation: 1,012 ft Turb Elevation: 1,115 ft
16	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 2,025 Ground: 2,036	09	Webber Canyon Nest Elevation: 1,249 ft Turb Elevation: 1,454 ft
17	2017: Unoccupied / Inactive 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 4,348 Ground: 4,374	09	Webber Canyon Nest Elevation: 987 ft Turb Elevation: 1,454 ft
30	2017: Not Located 2018: Unoccupied / Inactive 2019: Unoccupied / Inactive	Poor	Linear: 1,688 Ground: 1,710	28	Webber Canyon Nest Elevation: 1,169 ft Turb Elevation: 1,475 ft

<sup>1</sup> Nest 03: 2017-2019 = Adult in incubating posture during second survey; 2018: Adult on eggs observed second survey; 2019: Adult in incubating posture during second survey.

<sup>2</sup> Nest 08: 2017 = Adult standing on nest rim during first survey and absent second survey with no sign of nesting.

\* Nest 04 and Nest 22 in 2017-2018 and 2018-2019 survey reports are >2 miles from Project Turbines and roads.

*Figure contains confidential information and is being provided under separate cover*

**Figure 1. Ferruginous hawk nests documented 2017-2019 and associated WDFW disturbance avoidance buffers at active nests located within 2-miles of the Horse Heaven Clean Energy Center, Benton County Washington.**

*Figure contains confidential information and is being provided under separate cover*

**Figure 2. Unoccupied/Inactive ferruginous hawk nests documented 2017–2019 within Webber Canyon and Sheep Canyon at the Horse Heaven Clean Energy Center, Benton County Washington.**

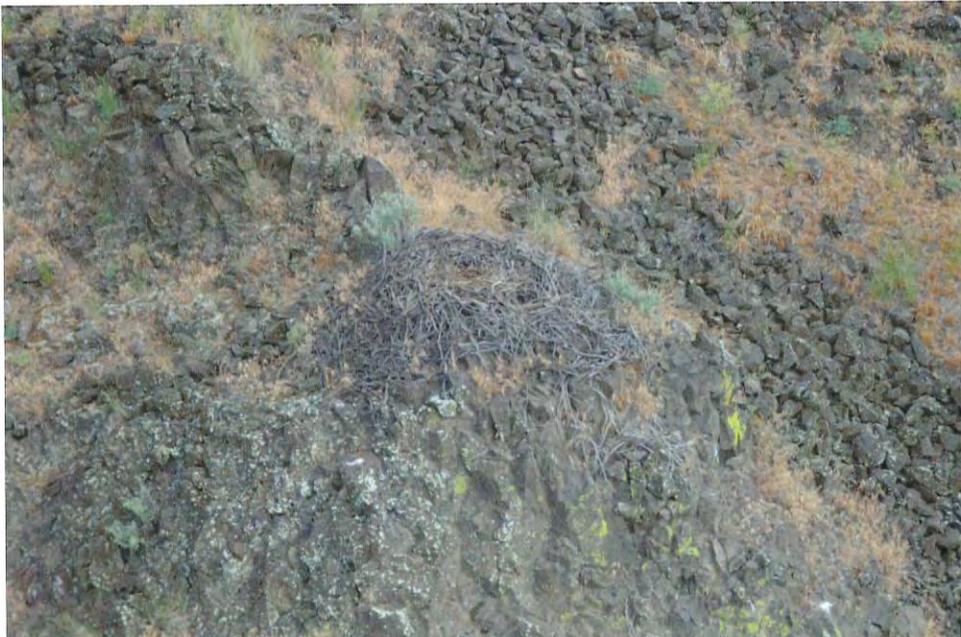
*Figure contains confidential information and is being provided under separate cover*

**Figure 3. Ferruginous hawk Nest 03 documented as occupied/active during raptor nest surveys conducted 2017-2019 within 2-miles of the Horse Heave Clean Energy Center, Benton County Washington. WDFW (2005) disturbance buffers are shown.**

*Figure contains confidential information and is being provided under separate cover*

**Figure 4. Ferruginous hawk Nest 08 documented as occupied/inactive in 2017 and associated WDFW disturbance avoidance buffer at the Horse Heave Clean Energy Center, Benton County Washington.**

**Appendix A. Examples of ferruginous hawk nest conditions**



**Example of a ferruginous hawk nest in good condition. Fresh nest material has been added and the nest may be used with very little repair, if any.**



**Example of a ferruginous hawk nest in poor condition. Substantial repair is needed prior to nesting. On the spectrum of poor nest conditions, this example is “higher quality” relative to other poor condition nests in the Horse Heaven Hills that were highly dilapidated and only remnants or a faint ring of sticks were present.**

**Appendix B. Recommended protective buffers for specified activities (WDFW 2005).**

Activities	Buffer Width (ft) <sup>a</sup>	Buffer Around	Timing	Comments
Avoid all human access & ground-based activities	820	Active nests	1 March - May 30 <sup>c</sup>	Delay construction and development until after young have dispersed, which generally occurs about a month after fledging
Prevent prolonged activities (>0.5 hrs)	3,280	Active nests	1 March - August 15 <sup>c</sup>	Ferruginous hawk's breeding season
Avoid development, rodenticide and pesticide application	1,300	major prey concentrations	year round <sup>b</sup>	Prey concentrations include ground squirrel colonies

<sup>a</sup> Buffers should be tailored to the individual hawks involved, based on factors such as line-of-sight distance between nest and activity, nest structure security, disturbance history, observed responses, and nest elevation in relation to the activity.

<sup>b</sup> Permanent buffer.

<sup>c</sup> Seasonal buffer to minimize disturbance during critical periods.

**ATTACHMENT B  
REPRESENTATIVE PHOTOGRAPHS FROM  
PROPOSED EASEMENT AREA**

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**Photo 1. Shrub-steppe in South Central Location**



**Photo 2. Shrub-steppe in Southwestern Corner**



**Photo 3. Non-native Grasslands in Southwestern Corner**



**Photo 4. Shrub-steppe in South Central Location**



**Photo 5. Grassland in Southeastern Corner**

**To:** Dave Kobus, Scout Renewable Energy  
**From:** Troy Rahmig, Tetra Tech; Erik Jansen, Western EcoSystems Technology, Inc.  
**Cc:** Tim McMahan, Stoel Rives  
**Date:** January 20, 2022  
**Subject:** **The Application of Novel Ferruginous Hawk (*Buteo regalis*) Data and Recommendations for the Horse Heaven Clean Energy Center, Benton County, Washington.**

## BACKGROUND

Since 2017, Scout Clean Energy (Scout) has been in the process of planning and developing the Horse Heaven Clean Energy Center (HHCEC) proposed for Benton County, Washington. As described in the Horse Heaven Wind Farm Bird and Bat Conservation Strategy, the Project has been developed to avoid, minimize, or mitigate potential effects to avian species, consistent with the U.S. Fish and Wildlife Service (USFWS) Land-Based Wind Energy Guidelines (WEG; USFWS 2012), the USFWS Eagle Conservation Plan Guidance (USFWS 2013), the Washington Department of Fish and Wildlife (WDFW) Wind Power Guidelines (WDFW 2009), and consistent with Washington Administrative Code (WAC) 463-60-332, which outlines the standards for the assessment of habitat, vegetation, fish, and wildlife resources during the siting of energy facilities.

Consistent with the WEG, HHCEC coordinated with the USFWS and WDFW on baseline studies, survey protocols and design as well as minimization measures to reduce impacts to avian and wildlife species. HHCEC met with USFWS and WDFW in two joint consultation meetings regarding the proposed Project on September 19, 2017 and January 28, 2020. Following the January 28, 2020 meeting, WDFW provided spatial and temporal buffers surrounding ferruginous hawk (*Buteo regalis*) nests consistent with Priority Habitats and Species (PHS) management recommendations (Larsen et al. 2004). Subsequent virtual meetings with WDFW occurred on January 27, 2021 to provide Project status updates as well as a summary of the avian habitat surveys completed in 2020. On April 1, 2021 WDFW provided written comment to the Energy Facility Site Evaluation Council (EFSEC). At no time during this multi-year coordination effort did WDFW suggest that alternative analyses or buffers, other than those described by Larsen et al. (2004), be used to minimize effects to ferruginous hawk or their habitats.

Scout has been proceeding with the work on the HHCEC with EFSEC and WDFW with the understanding that avoidance and minimization measures described in PHS Management Recommendations be applied for ferruginous hawk. On December 14, 2021, Mike Ritter (WDFW) mentioned a potential restrictive area surrounding active ferruginous hawk nests (5 and 10 km radius) that may need to be implemented to protect the species based on recent agency research. However, it was not until a follow-up meeting occurred on January 06, 2022 to discuss the status of ferruginous hawk in Washington and behavioral research conducted by Jim Watson (WDFW), that WDFW explained how the research may apply to the HHCEC. Watson, a recognized raptor biologist, and co-author of the publication considered by the Washington Fish & Wildlife Commissioners to uplist the species to state endangered (Hayes and Watson 2021), provided a summary from

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studies conducted in southcentral Washington, 2007-2014. Watson stated 17 birds (33 home ranges) were fitted with satellite receivers to measure daily movement. Aggregated daily movements provided a measure of bird use on the landscape surrounding a single nest site during the breeding period. Based on the research, WDFW determined that an area with a 3.2 km radius surrounding the nest is considered a core use area and 10 km is considered the full home range during the nesting period in Washington.

## **APPLICATION OF NEW INFORMATION**

In a research capacity, satellite GPS data represent the most accurate form of animal movement on the landscape available. However, Scout believes the data in its current form and potential application to HHCEC should not be considered during the State Environmental Protection Act (SEPA) analysis for the Site Certificate for the following reasons:

### ***Informal Guidance and Unclear Application***

To date, the recommended application and implementation for these data, which is yet to be published and peer reviewed, is informal. The consideration of these data has come from WDFW staff at project meetings and is not part of any published statewide guidance; the agency is in fact still developing guidance, including confirming any buffers and how they may be applied. WDFW staff made it clear during the January 06, 2022 meeting with Scout and EFSEC that the HHCEC is the first project under consideration for this new approach. It was not clear when, or if, more formal guidance from WDFW would be forthcoming. Further, the idea of using core use area and home range buffers was presented by WDFW without any specific instruction for how the buffers should or could be utilized in a SEPA analysis. The use of these data in any assessment at this time is by definition a novel exercise that has not been vetted by peers, resource agencies, regulators, or stakeholders. Guidance of this sort, which could have wide-ranging implications on renewable energy development in Washington, should be approached in a measured and thoughtful manner when formally released and broadly adopted by agencies and stakeholders.

### ***Not Representative of Best Available Science***

Per Washington Administrative Code, “best available science” means current scientific information used in the process to designate, protect, or restore critical areas that is derived from a valid scientific process following WAC 365-195-900 through 365-195-925. Indeed, expert opinion is a source of scientific information but lacks many elements inherent to a robust scientific process. The information relayed in the meeting on January 6, 2022 has not been peer reviewed and there are inconsistencies between what WDFW states and the limited information that is available. The only published source of the information is found in the periodic status assessment where Hayes and Watson (2021) state: home ranges averaged 315.9 km<sup>2</sup> (Brownian Bridge 95% isopleths) and 32.3 km<sup>2</sup> (50% isopleths) for seventeen breeding pairs in southcentral Washington and northcentral Oregon from 2007 to 2014 (J. Watson, WDFW, unpublished data). However, there is no distinction of how alternative nest territories, occupied inactive or failed nests, or historic nests are considered and, more importantly, how these data should be applied in a management context. Clearly, these discrepancies represent the preliminary nature of the data and future vetting and consideration is needed to ensure:

- The data are being implemented in a manner that is consistent with its intended purpose,

- Analyses are robust and peer-reviewed,
- Implementation of the data in a management setting are within the bounds of inference that can be made from the original data,
- Recommendations are adopted or codified in a manner that ensures the consistent application and interpretation across land use decisions in Washington.

For example, determinations of minimum habitat thresholds, resource use and selection, and land use intensity thresholds within core use areas and home ranges are beyond the inferences that can be made from data (J. Watson, WDFW, pers comm). The application of preliminary use data to create a novel analytical framework that evaluates an effect to a species is by definition not the best available science.

As stated on WDFW's website, the WAC refers to PHS in sections dealing with Critical Area Ordinances, Shoreline Master Programs, and the EFSEC. The state supreme court has held that PHS is a valid source of best available science for the Growth Management Act. Accordingly, Scout has incorporated into its project design the existing management recommendation for ferruginous hawk as described by the current published Priority Species recommendations (Larsen et al. 2004) and as instructed by WDFW during pre-application consultation meetings.

### ***Inappropriate Timing of New Guidance***

Scout has been diligently working on the HHCEC with EFSEC since 2020 and with WDFW since 2017 consistent with the WEG and the WDFW Wind Power Guidelines and is committed to implementing actions that are protective of the ferruginous hawk consistent with available data and guidance. The information presented by WDFW on January 6, 2022 was collected between 2007-2014. Data now being used to justify the proposed guidance have been available since 2014 but have not yet been published or otherwise made publicly available. Although ferruginous hawks have only recently been listed as state endangered, WDFW has had concerns for years regarding this species. Raptor nest surveys were completed annually within 2-miles of the HHCEC project boundaries from 2017 to 2019 and the presence of ferruginous hawk nest locations near the project site have been known to WDFW since 2017. If WDFW wanted this information to be considered in the SEPA analysis, then it should have raised it during pre-application consultation meetings or in the Environmental Impact Statement (EIS) scoping process, to allow for proper vetting and incorporating into project design documents. The SEPA scoping period ended in June 2021 and the EIS is expected to be completed in May 2022. Combined with the unprecedented application, inserting new information late into the planning process, particularly new requirements of this magnitude, will very likely result in costly schedule delays. The HHCEC needs to be constructed by 2024 in order to meet the anticipated interconnection date, which is responsive to regional utility plans resulting from state carbon-reduction policy initiatives.

### ***Burden for Guideline Development***

The burden for the development of new guidelines rests with WDFW. Utilization of core use area and home range buffers for ferruginous hawk may have significant implications on whether or how renewable energy projects are built in Washington State. How the buffers should be used in project planning and SEPA analyses

has not been made clear by WDFW. At present, WDFW seems to be relying on EFSEC, and their consultants for the HHCEC SEPA review, to create that methodology. The implications of these buffers on renewable energy development go far beyond the HHCEC and therefore should not move forward without the ability for stakeholder involvement and thoughtful analyses. Wide-ranging precedent like this should not be set haphazardly. It should be done with careful consideration of the short- and long-term implications for Washington's renewable energy future.

### **PROPOSED MITIGATION APPROACH IN LIEU OF GUIDANCE**

Despite the concern regarding the premature application of these buffers for this Project at this time, Scout intends to continue to implement measures to minimize impacts on ferruginous hawk, as described in the Application for Site Certification (ASC) and Habitat Mitigation Plan (Appendix L to the ASC), and develop compensatory habitat mitigation to offset any potential remaining impacts to ferruginous hawk once minimization measures have been implemented (Larsen et al. 2004). Scout has worked with WDFW and EFSEC since 2017 to characterize the potential for ferruginous hawk, and other raptors, to occur in or near the project area and tailored minimization and mitigation measures specifically to minimize and mitigate impacts to ferruginous hawk. In addition to providing mitigation to meet the tenets discussed in the WDFW 2009 Wind Power Guidelines and related administrative codes, Scout intends to identify a mitigation approach that meaningfully contributes to the conservation of suitable foraging and nesting habitat, which are identified as conservation priorities (Hayes and Watson 2021). Scout is committed to providing habitat mitigation consistent with the mitigation ratios presented in the Habitat Mitigation Plan (HMP), which include shrub-steppe and grassland habitat, both of which provide suitable habitat for ferruginous hawk. When finalizing a mitigation approach, Scout will consider areas of high prey concentration as mapped by Washington Wildlife Habitat Connectivity Working Group and locations within core use areas or home ranges for ferruginous hawk, such that the final mitigation solution provides conservation value relative to the potential impacts the project may have. This general strategy is consistent with the approach that was discussed in the HMP submitted with the ASC (Appendix L), yet broadens the criteria to include species-specific characteristics that would benefit ferruginous hawk.

### **RECOMMENDED FERRUGINOUS HAWK ASSESSMENT METHOD**

Scout has been working in coordination with WDFW since 2017 and has followed the USFWS Land-Based Wind Energy Guidelines, the USFWS Eagle Conservation Plan Guidance, the WDFW Wind Power Guidelines and had been proceeding with the work on the HHCEC with the understanding that the avoidance, minimization and mitigation measures for the ferruginous hawk were consistent with WAC 463-60-332 and WAC 365-195-900 through 365-195-925. However, in light of WDFW's recent discussions regarding its informal guidance, Scout proposes to implement additional conservation measures utilizing the following approach which will provide

context for land cover types surrounding a nest and potential benefits from mitigation activities, when occupied<sup>1</sup> ferruginous hawk nests are observed near project-related infrastructure.

In order to confirm that the mitigation approach meaningfully contributes to the conservation of ferruginous hawk, and potential impacts to ferruginous hawk from the project are adequately offset, the following assessment process is proposed. This assessment process will be incorporated in the HMP and utilized when selecting the location of the final mitigation approach (i.e., placement of a conservation easement or contribution to relevant conservation efforts).

### **General Assessment Steps**

1. An assessment will be conducted for all occupied<sup>1</sup> nests in the PHS database within 10 km of the project boundary. If recent information about the status of a nest within 10 km is not known it will be considered occupied, unless data is available to state otherwise.
2. Within the 3.2 km and 10 km buffers of the occupied nests identified in #1, the following information will be assessed and summarized to the extent possible. Additional information that is relevant to ferruginous hawk ecology will be included as available.
  - a. Acres and percent of buffer that is suitable habitat for ferruginous hawk (as defined in Management Recommendations for Washington's Priority Species – Volume IV: Birds [Larsen et al. 2004]).
  - b. Acres and percent of buffer that is comprised of habitat concentrations for prey species.
  - c. Acres and percent of buffer that is comprised of human altered habitat (e.g., urban, paved roads, industrial, vineyards or other intensive agriculture that would not provide suitable habitat for ferruginous hawk).
3. Utilizing the data from #2 the estimated impacts from the project due to habitat loss or alteration will be considered within the context of resources available to ferruginous hawk within the core use area and home range, allowing for a statement of relative impact that the project may have on a nest location.
4. Similarly, using the data from #2, the potential benefits of any proposed mitigation approach will be considered. For example, if a proposed mitigation area is located within a known ferruginous hawk core use area or home range, the resources (as noted in #2) within the mitigation area will be evaluated relative to the needs of ferruginous hawk. These available resources will then be assessed in context with impacts estimated at the project site, and the relation of those impacts to ferruginous hawk ecology. The mitigation approach will offset project effects within core use areas and home ranges for known nest locations.

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<sup>1</sup> Larsen et al. (2004) uses the term occupied nest, but does not provide a definition. Recommend reference to USFWS 2013 for definitions and determination of nest status.

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State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

Pasco District Office, Habitat Program • 2620 North Commercial Avenue, Pasco, WA 99301

June 10, 2021

Sonia Bumpus, EFSEC Manager  
Washington Energy Facility Site Evaluation Council  
621 Woodland Square Loop SE  
PO Box 43172  
Lacey, WA 98504-3172

Subject: Scoping: Horse Heaven Hills Wind, Solar, and Battery Storage Project

Ms. Bumpus,

In April 2021, WDFW provided our initial comments on this project, drawing particular attention to the immense size of the project along the Horse Heaven Hills ridgeline and the subsequent landscape-scale impacts to important habitat and ecological connectivity. The habitat represents some of the last remaining functional and uninterrupted shrub-steppe and natural grasslands in Benton County and has remained largely undeveloped or converted to agriculture due to its shallower soils and steeper gradients. Development within this ridgeline will result in further fragmentation and isolation of shrub-steppe and grassland habitat as well as loss of function and value to wildlife.

While the majority of the project is sited over existing dryland wheat fields, the project's location in the Horse Heaven Hills puts many of the turbines, micro-siting corridors, transmission lines, solar arrays, etc., in close proximity to, and crossing over, many of the draws and canyons that provide some of the only native habitats in the area. These areas, as well as the entire Horse Heaven Hills ridgeline, are used seasonally and year-round by a variety of avian species, some of which are State, Priority, Candidate, and Threatened Species. In fact, the entire Horse Heaven Hills ridgeline is an important area for avian species and other wildlife, including reintroduced Pronghorn antelope. It is a strategic location that provides suitable habitat for a variety of native plant and wildlife species and has been recognized as such through a variety of scientifically validated stakeholder publications: *The Spatial Conservation Priorities in the Columbia Plateau Ecoregion – Methods and data used to identify collaborative conservation priority areas for the Arid Lands Initiative* and *The Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion*.

Due to the significant landscape-level impact from this project, we offer the following recommendations for further consideration and analysis:

- We would like to reiterate our comments from our April letter that the project focus only on solar development (no wind energy development) on agricultural and grasslands in the southern edge of the lease area and to the southwest. This includes transmission corridors and all



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supporting infrastructure. This would help preserve the integrity of the Horse Heaven Hills ridge line as the only documented and scientifically identified east/west ecological corridor supporting native habitats and wildlife in Benton County

- The Ferruginous hawk is a State of Washington Threatened Species that has been proposed for uplisting to Endangered. Our Priority Habitats and Species recommendations for this bird are:

Activities	Buffer width <sup>a</sup>	Buffer around	Timing	Comments
Avoid all human access & ground-based activities	820'	active nests	1 March – May 30 <sup>c</sup>	Delay construction and development until after young have dispersed, which generally occurs about a month after fledging
Prevent prolonged activities (>0.5 hours)	3280'	active nests	1 March – August 15 <sup>c</sup>	Ferruginous hawk's breeding season
Avoid development, rodenticide and pesticide application.	1300'	major prey concentrations	year round <sup>b</sup>	Prey concentrations include ground squirrel colonies

<sup>a</sup> Buffers should be tailored to the individual hawks involved, based on factors such as line-of-sight distance between nest and activity, nest structure security, disturbance history, observed responses, and nest elevation in relation to the activity. <sup>b</sup> Permanent buffer. <sup>c</sup> Seasonal buffer to minimize disturbance during critical periods.

and the project should fully discuss and analyze how the project will not impact this species its' prey base.

- Any aspect of the project (collector lines, transmission lines, turbines, solar areas, battery storage, new roads, etc.) that could adversely affect this species' prey base should be discussed and analyzed.
- Pronghorn antelope utilize the western portion of the proposed project site year especially in the winter. Impacts to this herd should be detailed as it relates to the long term viability of this reintroduce population across the greater Horse Heaven Hills landscape.
- The project should include a discussion on how any complete loss of connectivity along the Horse Heaven Hills ridgeline will be mitigated.
- Mitigation values should not be calculated until a preferred Alternative is selected and a complete understanding of the impacts can be evaluated.
- In order to maintain some connectivity across the landscape as it is set up in arrays (as opposed to one large development) and not cross any canyons/draws to maintain some connectivity across the landscape.
- If wind energy development is proposed, siting should not cross, or otherwise impact, "waters of the state" or canyons/draws. All collector and transmission lines should be set south of the ridgeline and parallel to (roughly east/west) with perpendicular collector lines to each turbine.

- All turbine locations, micrositing corridors, and transmission corridors be surveyed to better understand project impacts and that further refinement of the micrositing corridor and turbine locations could occur based on the findings of these surveys.

Please contact me at 509-380-3028 or at [Michael.Ritter@dfw.wa.gov](mailto:Michael.Ritter@dfw.wa.gov) with any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter". The signature is written in a cursive, slightly slanted style.

Michael Ritter  
Area Habitat Biologist  
Statewide Technical Lead: Wind and Solar



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

Pasco District Office, Habitat Program • 2620 North Commercial Avenue, Pasco, WA 99301

January 11, 2022

Patricia Betts  
Washington Energy Facility Site Evaluation Council  
621 Woodland Square Loop SE  
PO Box 43172  
Olympia, WA 98504-3172

Subject: Ferruginous Hawk

Due to the recent discussions we (EFSEC, Golder, Scout, West, and WDFW) have had regarding ferruginous hawk (FEHA) nests, buffers, core areas, zones of influence, etc., we thought we should make a formal comment on the November 23, 2021, Memo from Erik Jansen (West, Inc.) to Dave Kobus (Scout) entitled *WDFW Data Request for Ferruginous Hawk Nests and Distances to Project Infrastructure Received from the Washington Energy Facility Site Evaluation Council on November 18, 2021*.

1. WDFW is using the best available science regarding core areas and home ranges of FEHA as the basis for our analysis and recommendations. Presently, WDFW is in the process of updating management recommendations for FEHA in PHS.
2. The memo uses outdated WDFW PHS recommendations from 2005 that were not meant to address energy development and are from a time when the species was not listed as endangered.
3. The only FEHA nests of importance based on the memo were those observed from 2017-19 by WEST. In contrast, WDFW considers the relevance of all historical FEHA nest (territory) locations as relevant for management to provide known historical habitat for recovery and to meet recovery goals.
4. WEST used a 2-mile buffer based on USFWS rules for surveys but WDFW is basing potential needs on home ranges and core areas from regional FEHA data.
5. WEST uses "nests" as the point of management whereas we manage on the basis of territory (i.e., breeding pair) and consider the relevance and relationship of multiple nests on the territory.
6. The focus on distance of the nest to turbines is important for assessing probability of turbine strikes but is not the only issue related to development that will affect FEHA. As we have seen with the other turbine/raptor study, long-term declines in occupancy after the initial birds are gone declines for FEHA, and eagles, at least in part related to increase in ravens, red-tails, great-



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horned owls, and Swainson's hawks. These species kill or displace FEHA from nests. Secondly, reductions in prey (ground squirrels) likely also play into long-term occupancy for FEHA.

7. Our approach is using what the birds need as the basis for "mitigation" (i.e., core area and home range buffers) RATHER THAN what we can remove or impact within that area before they are affected. These are two different approaches – the former approach addresses all these effects cumulatively for an endangered species – the later approach is a piece-meal plan of what might affect the birds potentially with a lot more uncertainty and increased risk.

Please contact me at 509-380-3028 or at [Michael.Ritter@dfw.wa.gov](mailto:Michael.Ritter@dfw.wa.gov) with any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter". The signature is written in a cursive, slightly slanted style.

Michael Ritter  
Area Habitat Biologist  
Statewide Technical Lead: Wind and Solar



State of Washington  
**DEPARTMENT OF FISH AND WILDLIFE**

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March 31, 2021

Amy Moon  
Washington Energy Facility Site Evaluation Council  
621 Woodland Square Loop SE  
PO Box 43172  
Olympia, WA 98504-3172

Subject: Horse Heaven Hills Wind, Solar, and Battery Storage Project

Ms. Moon,

First and foremost, we want to emphasize the importance of renewable energy as part of a modernized energy portfolio consistent with state policy. The Washington Department of Fish and Wildlife (WDFW) fully supports Governor Inslee's goals for decarbonization in Washington State. Realizing this vision requires considerable planning and technical work to ensure renewable energy sources are sited in a manner that avoids unintended impacts on fish and wildlife resources.

We have reviewed the Application for Site Certification, Appendix K (Biological Reports), and Appendix M (Bird and Bat Conservation Strategy). We have also made use of Figure 3.4-4 (Fish and Wildlife Habitat Conservation Areas) in the Application for Site Certification (ASC), and Appendix N (Revegetation and Noxious Weed Management Plan). What follows are initial WDFW comments on the Horse Heaven Hills Wind, Solar and Battery Storage (HWSB) project, and we will continue to provide comments as we further discuss the project both internally and externally with the developer, their consultant, and EFSEC.

The HWSB project represents the largest renewable energy project in the State of Washington by far, and its' proposed solar development is over three times as large as any single solar project being constructed or proposed in the State. The HWSB covers almost 73,000 contiguous leased acres and spans nearly 27-miles just south of the Tri-Cities along the Horse Heaven Hills from above Finley on the east to above Benton City on the west. We appreciate that HWSB has sited approximately 80% of its project within, on, and over existing dryland wheat lands as well as the level of coordination over the last several years. However, the immense size of the HWSB along the Horse Hills ridgeline and the subsequent landscape-scale impact to an important habitat and ecological connectivity will be difficult if not impossible to mitigate. It is important to note that the lineal Horse Heaven Hills represent some of the last remaining functional and uninterrupted shrub-steppe and natural grasslands in Benton County. This ridge has remained largely undeveloped or converted to agriculture due to its shallower soils and steeper gradients. While some of the ridge has been altered by fire, it does retain important function and value, soils, and site potential for recovery over time with expected vegetative succession.



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Development within this ridge will result in further fragmentation and isolation of shrub-steppe and grassland habitat as well as loss of function and value to wildlife.

While HWSB has sited the majority of the project over existing dryland wheat fields, the project's location and east-west orientation in the Horse Heaven Hills puts many of the turbines, micro-siting corridors, transmission lines, solar arrays, etc., in close proximity to, and crossing over, many of the draws and canyons that provide some of the only native shrubsteppe and grassland habitats in the area. These areas, as well as the entire Horse Heaven Hills ridgeline, are used seasonally and year-round by a variety of avian species, some of which are State, Priority, Candidate, and Threatened Species. In fact, the entire Horse Heaven Hills ridgeline is an important foraging area for avian species, including various raptors, and other wildlife.

We appreciate that the HWSB project acknowledged the importance of habitat connectivity and linkages in relationship to the project. On page 3-129, the north/south linkage just to the west of and parallel to the highway is referenced as well as the supporting analysis from the Statewide Connectivity Analysis. However, The Arid Lands Initiative Core Team produced a map of shared priority areas that was developed based on two scientific analyses specifically for the Columbia Plateau Ecoregion that includes the HWSB project. These two analyses are: *The Spatial Conservation Priorities in the Columbia Plateau Ecoregion – Methods and data used to identify collaborative conservation priority areas for the Arid Lands Initiative* and *The Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion*. Not only does the shared priorities map identify the north/south linkage but also identifies an important east/west linkage along the entire Horse Heaven Hills ridgeline that encompasses, very likely, the entire HWSB project site. Both linkages provide landscape connectivity, native habitats, and provide important ecological functions and values for resident and migratory wildlife in an already fairly developed landscape. The proposed construction of the HWSB project represents a significant landscape-level impact to habitat connectivity and to wildlife that will require compensatory mitigation.

HWSB proposes to construct solar arrays and battery storage at up to three locations within the project. For solar arrays that have any draws/canyons and or ephemeral drainages through them, these areas should be maintained as open and connected to adjacent and offsite habitats. There should be no roads, fencing, or underground utilities across these areas. Various maps in the ASC (i.e. Figure 2.3-8, 3.4-1) depict the two southern solar areas, one on the east and the other on the west, in various fenced arrays that do not appear to block any draws/canyons or ephemeral drainages. However, these same figures depict the northern solar area on the west project boundary as two fenced arrays that completely block a draw/canyon/drainage. Figure 3.3-2 identifies this area as an intermittent stream and we recommend that this array be fenced differently than what is illustrated to avoid this area to maintain some connectivity across the landscape, just as the other two solar development areas show.

Also related to the solar arrays, we consider impacts to vegetation inside the fenced area as the permanent loss of existing habitat functions and values and wildlife use. We agree with the statement on page 2-49 "... it is assumed that all areas within the fenced area would be permanently impacted...", but do not agree with statements on at least page 1-63 that states "...habitat type would become modified habitat under the solar array..." or in Table 3.4-14 footnote 2/ that states "...therefore, these impacts would be considered a modification of habitat rather than a temporary or permanent impact." Habitats within the fenced area will be permanently impacted, maintained, mowed, fenced to exclude many species of wildlife, and will experience frequent disturbance associated with operation and maintenance (cleaning panels etc.) of the associated infrastructure.

HWSB provides information related to both a 244-turbine layout for shorter turbines and a 150-turbine layout for taller turbines. We agree that table 3.4-14 *might* represent the maximum acreage of impact, but the applicant clearly states that only 44 of the up to the 244 turbine locations have been surveyed. Adding some confusion to this is the fact that it is not known if all or some of these locations are the same as for the 150-turbine layout. We recommend that all turbine locations, micro-siting corridors, and transmission corridors be surveyed to better understand project impacts and that further refinement of the micro-siting corridor and turbine locations could occur based on the findings of these surveys. For example, the transmission corridor shown in Map 6 of Figure 3.4-4 passes through shrubsteppe and across a “Waters of the State” and in Map 4 of this same figure, the micro-siting corridor passes through shrubsteppe and over “Waters of the State.” We look forward to working with HWSB to further refine the project layout to avoid and minimize impacts to these and similar areas. Since the layout presented is that for 244 turbines, we are interested in how the 150-turbine layout might avoid and minimize these impacts. Relocating turbines further south from the ridgetop and shrubsteppe would also be very helpful in avoiding avian impacts.

In contrast to the acreage values of grassland and shrubland that would be permanently and temporarily impacted by the wind and solar developments separately (page 1-163), we have calculated, based on the data in Table 3.4-14, that wind energy development would permanently impact 40.8 acres of grassland and shrubland (not 93 acres) and temporarily impact 551 acres of grassland and shrubland (not 571 acres). Solar energy development would permanently impact 944.1 acres of grassland and shrubland and temporarily impact 19.1 acres of grassland and shrubland (not 891 acres).

Overall, we have calculated 1,555 acres of temporary and permanent impacts to grassland and shrubland habitats from both wind and solar energy development. By grassland and shrubland habitat type, the temporary and permanent impacts and mitigation ratios and mitigation values are as follows:

	Wind	Solar	Total	Ratio	Mitigation
Temporary Grassland	381	12.1	393.1	0.1:1	39.3
Permanent Grassland	28	462.1	490.1	1:1	88.5
Temporary Shrubsteppe	170	7	177	0.5:1	490.1
Permanent Shrubsteppe	12.8	482	494.8	2:1	989.6
			1,555		1,607.5

Based on the direct impacts to these habitats, and not accounting for other direct and indirect impacts to the losses of habitat functions and values and the landscape-scale impact to Horse Heaven Hills connectivity that we identified earlier that would be difficult if not impossible to mitigate, we very conservatively estimate approximately 1,608 acres for mitigation.

We appreciated the analysis of mean exposure indices for potential avian impacts within the rotor swept height (RSH) for both the shorter and taller turbines. Based on the data in table 3.4-9, use of the tall GE 5.5 turbine would result in lower exposure indices for many of the 66 bird species recorded on the HWSB site, with the exception of snow and Canada geese. Additionally, use of the taller turbines would result in 94 fewer machines on the landscape and we look forward to working with HWSB to microsite these further away from documented raptor nesting or foraging areas than is shown in the 244-turbine layout. For example, Map 4 of Figure 3.4-4 (Fish and Wildlife Habitat Conservation Areas)

shows turbine locations adjacent to Webber and Sheep Canyons and along the ridge between these canyons. We realize that there is already a 350' disturbance buffer around the turbines and micro-siting corridors, but removing turbines from the this ridge and canyon rims or from crossing the canyon (Sheep) would provide additional buffer and habitat for the variety of raptors that have utilized these areas for nesting and foraging for decades. Additionally, these canyons are important nesting and foraging habitat for Ferruginous Hawk, a State Threatened Species that is in the process of being uplisted to Endangered. Maintaining sufficient foraging area to support successful territories and nesting for Ferruginous Hawks and other raptors that use thermals and air currents associated with the Horse Heaven Hills seems particularly challenging with current proposed structure orientation.

We are in general agreement with the Revegetation and Noxious Weed Management Plan (Appendix N) in terms of stockpiling topsoil, weed treatments, seed mixes, planting methodologies, and 3-year monitoring for grasslands and 5-year monitoring for shrublands.

Finally, the Horse Heaven Hills ridge line from the east near the Columbia River to the west and beyond Prosser provides important shrubsteppe habitats and landscape connectivity. In fact, we have worked closely with Benton County and private developers to mitigate previous projects in a way that conserves native habitats and connectivity in this area. Constructing the HWSB would result in the loss of ecological connectivity and impacts to and losses of wildlife species. To reduce the landscape-scale impact of the HWSB and maintain connectivity we recommend that the project focus on solar development only on agricultural and grasslands in the southern edge of the HWSB lease area and to the southwest. This includes transmission corridors and all supporting infrastructure. This would preserve the integrity of the Horse Heaven Hills ridge line as the only documented and scientifically-validated east/west ecological corridor supporting native habitats and wildlife in Benton County.

Please contact me at 509-380-3028 or at [Michael.Ritter@dfw.wa.gov](mailto:Michael.Ritter@dfw.wa.gov) with any questions.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter". The signature is written in a cursive, flowing style.

Michael Ritter  
Area Habitat Biologist  
Statewide Technical Lead: Wind and Solar

# Population Viability Analysis of Ferruginous Hawk (*Buteo regalis*) in Eastern Washington

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**November 14, 2022**



## EXECUTIVE SUMMARY

Horse Heaven Wind Farm, LLC (Horse Heaven) is proposing development of the Horse Heaven Clean Energy Center (Project) in Benton County, Washington. The breeding range of the state-endangered ferruginous hawk (*Buteo regalis*) overlaps the Project. Although the Washington nesting population size has historically been low compared to populations in surrounding states, the decline in the Washington breeding population over the past half century was a factor considered in the recent decision to uplist the species to state endangered. Due to the species vulnerability to the effects of wind energy development, Western EcoSystems Technology, Inc. (WEST) analyzed how ferruginous hawk populations might be impacted by hypothetical impact scenarios and how the population might respond to potential mitigation measures.

We used a population viability analysis (PVA) to model projected outcomes and sensitivities to various levels of impacts from wind energy development and proposed mitigation measures. Our study objectives were to: 1) use a stochastic growth model to generate a baseline population growth rate based on published vital rates, 2) simulate how biologically realistic levels of direct and indirect effects influence nesting population trends, 3) identify sensitive life-history stages to guide future conservation management actions, and 4) simulate how conservation efforts from the construction and use of artificial nest platforms (nest platforms) might affect population trends.

Using a range of scenarios, ferruginous hawk PVA simulations resulted in the following key points:

- Declining baseline population growth rates ( $\lambda$ ) of 0.97 reduced the number of occupied nesting territories (territory) by 49% from 47 to 24 nesting territories over a 30-year period.
- The low levels of direct effects simulating loss of six adults over 30 years due to wind energy reduced the number of nesting territories by 50% over a 30-year period; however, indirect effects from the loss of one territory resulted in a 57% a reduction in nesting territories. Thus, population trajectories showed a comparatively greater response to the loss of nesting territories than collisions (the loss of individual birds). Combined, these scenarios magnified the effects on population trend, depending on the intensity of the effect.
- The average number of nesting territories were largely unaffected by variable survival rates of adults and juveniles.
- Construction of artificial nest platforms in suitable areas lacking natural nest substrates can effectively maintain or increase nesting territory occupancy. Assuming an average annual occupancy rate of 36%, increases of three to 10 nesting territories can positively affect ferruginous hawk population trends.

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Cover Page: Unoccupied ferruginous hawk nest in the shrub-steppe grasslands of the Big Horn Basin, Montana, June 2005; ferruginous hawk nestlings adjacent to a coal bed methane gas pad in the Powder River Basin, Wyoming, June 2005. This Page: Adult ferruginous hawk on an electric power pole in the Llano Estacado Plateau, Texas, February 2013. All photographs by E. Jansen

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## 1 INTRODUCTION

Horse Heaven Wind Farm, LLC (Horse Heaven) is proposing development of the Horse Heaven Clean Energy Center (Project) in Benton County, Washington. The breeding range of the state-endangered ferruginous hawk (*Buteo regalis*) overlaps the Project and historical nests are located within 2.0 miles (mi; 3.2 kilometers [km]) of Project facilities. Decline in the Washington breeding population over the past half-century was a factor considered in the recent decision to uplist the species to state endangered. Mortality from turbine collisions and reduced territory occupancy resulting from wind energy development both have the potential to affect population trends, particularly in populations with few individuals (Squires et al. 2020, Diffendorfer et al. 2021, Watson et al. 2021). Due to the species vulnerability to the effects of wind energy development, Western EcoSystems Technology, Inc. (WEST) analyzed how ferruginous hawk populations might be impacted by hypothetical impact scenarios and how the population might respond to potential mitigation measures.

We used a population viability analysis (PVA) that incorporated ferruginous hawk population demographics to model projected outcomes and sensitivities to various levels of Project impacts and proposed mitigation measures (Reed et al. 2002, Saeher and Engen 2002). PVA models have been used in a wide variety of applications to model extinction probabilities, identify sensitivities in demographic or genetic parameters, or simulate the outcome of different management scenarios (Beissinger and McCullough 2002). Specifically for ferruginous hawk, PVA models have been used to examine how changes in demographic vital rate parameters affect population growth in US Forest Service Region 2 (Collins and Reynolds 2005), and to simulate how collisions with wind turbines could affect population growth rates throughout the species' range in the US (Diffendorfer et al. 2021). In this study, our overall objective was to compare effects of management actions and vital rate sensitivities following Reed et al. (2002), who provided guidance on the application of demographic matrix models. This study does not attempt to predict the probability of extinction due to the small population size (e.g., < 200 individuals) and uncertainty of survival rates and long-term territory occupancy in Washington. To our knowledge, this is the first PVA of ferruginous hawk in Washington applied to a proposed wind energy development scenario.

We considered a range of model scenarios to account for uncertainty in demographic vital rates, direct and indirect effects, conservation efforts, and how Project impacts could affect the population. We used vital rate parameters (e.g., survival, nesting success) typically used in population modeling to determine how direct effects (wind turbine mortality), indirect effects (nest occupancy), and conservation effects (artificial nest platforms) influenced population trends. Specifically, our study objectives were to: 1) use a stochastic growth model to generate a baseline population growth rate based on published vital rates, 2) simulate how biologically realistic levels of direct and indirect effects influence nesting population trends, 3) identify sensitive life-history stages to guide future conservation management actions, and 4) simulate how conservation efforts from the construction and use of artificial nest platforms affected nesting population trends.

## 2 ANALYSIS AREA

The Analysis Area consisted of two areas. We considered a Study Area that included the entire breeding range of the ferruginous hawk in Washington; and a comparatively smaller Project Area where wind energy development is proposed and potential Project impacts to the population were evaluated.

### 2.1 Study Area

The Study Area occurs in the Level III Columbia Plateau Ecoregion (CPE) in eastern Washington (Clarke and Bryce 1997). The CPE includes the shrub-steppe and grassland nesting habitat that encompasses the northwestern extent of ferruginous hawk nesting in the US. As part of the larger Great Basin Bird Conservation Region (BCR 9), approximately 74% of the CPE is located within Washington (Bird Studies Canada and US North American Bird Conservation Initiative 2014). We used the CPE in Washington as the Study Area because its inclusion of suitable nesting habitat, including all publicly available records of ferruginous hawk nests in Washington, as well as it being a focal area for renewable energy development in the region (Hayes and Watson 2021, Washington Department of Fish and Wildlife [WDFW] 2021, Renewable Northwest 2022).

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 estimated 130 ferruginous hawk (95% confidence intervals [CI]: 0–370) within the Washington portion of the Great Basin BCR. Population trends corresponded with -1.59% annual change &, í IQ: DMKQVMQ EDMHG RQ%%6 GDU í 6 DXHUMDO 7KH  
 last WDFW statewide-population surveys conducted in 2016 documented 32 breeding pairs and 47 occupied nests at 263 known territories (Hayes and Watson 2021).

### 2.2 Project Area

The Project Area consisted of a 113 mi<sup>2</sup> (293 km<sup>2</sup>) Project Lease Boundary, of which approximately 35 mi<sup>2</sup> (91 km<sup>2</sup>; 31%) consists of micrositing corridors<sup>1</sup> where 244 wind turbines, three areas of solar array and related infrastructure are proposed in a maximum build scenario (Horse Heaven Wind Farm, LLC 2021). The Project Area is located adjacent to the Tri-cities urban areas of Kennewick, Richland, and Pasco. The majority of native land cover (e.g., shrub-steppe and grassland) within and surrounding the Project Area has been converted to dryland and irrigated wheat (*Triticum aestivum*) cropland (Horse Heaven Wind Farm, LLC 2021). Portions of the 63-wind turbine generator Nine Canyon Wind Project were located within or adjacent to the Project Area.

Historical ferruginous hawk nest sites occurred within 2.0 mi of the proposed infrastructure, primarily at a relatively broad ridge along the northern perimeter of the Project Area. Four years of surveys during the nesting season resulted in low historical nest occupancy<sup>2</sup>. Nest surveys conducted for the Project during 2017–2019 and 2022 resulted in two occupied nests, one of

<sup>1</sup> Micrositing corridors consisted of an 18.5 mi<sup>2</sup> (47.9 km<sup>2</sup>) Wind Energy Micrositing Corridor and 16.8 mi<sup>2</sup> (43.5 km<sup>2</sup>) of a Solar Siting Area (Horse Heaven Wind Farm, LLC 2021).

<sup>2</sup> As defined by Steenhof and Newton 2007 and USFWS 2013

which had an adult incubating during the 2017–2019 nesting seasons and the other nesting attempt was abandoned in 2017, and then was gone in subsequent nesting seasons (Jansen 2022).

### 3 METHODS

In this study, we used a 3-stage population projection matrix with three life history stages to estimate population growth rate ( $\lambda$ ) and simulate population trends under potential model scenarios (Figure 1). The three life history stages followed Lande (1988) and incorporated a 1-year projection interval.

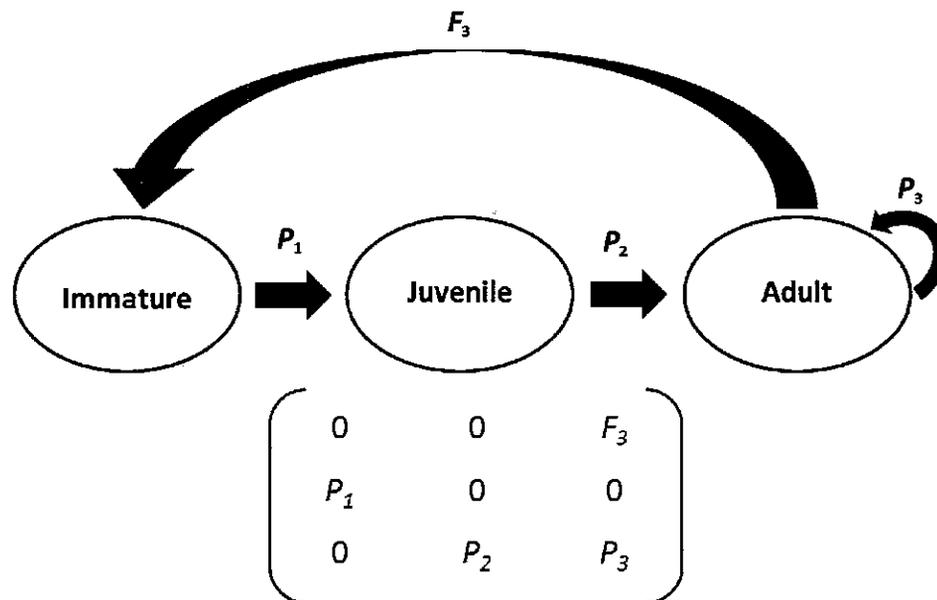


Figure 1. Life cycle diagram and corresponding structure of the 3×3 projection matrix used in the ferruginous hawk population trend analysis in Washington. The probability ( $P$ ) of survival from each stage to the next stage is represented by the subscript value. Fecundity ( $F$ ) demonstrates biological productivity from adults back into the immature stage.

The first stage, immature, included individuals that survived from fledgling to dispersal, the second stage represented non-reproductive juveniles, and the third stage represented reproductively mature adults (Lande et al. 1988). Ferruginous hawk reach reproductive maturity between the ages of two and three (Wheeler 2003, Ng et al. 2020); thus, the projection matrix assumed reproduction after year two and continues indefinitely as birds age. Natural mortality due to age was implicit in the adult survival parameter. We selected vital rates for each parameter from published literature (Table 1). Because of the geographically constrained breeding population in southeast Washington, we attempted to keep all parameter values as local as possible to avoid introducing regional or national vital rates that may not reflect the condition of the breeding population.

Baseline adult fecundity estimates were based on 38 years (1978–2016) of nesting and reproductive success data in Washington (Table 2; Hayes and Watson 2021). The adult fecundity parameter ( $F$ ) was calculated by taking the average number of successful nestlings per pair (2.4) and multiplying it by the average proportion of known successful nests (0.81), the proportion of breeding pairs contributing to the breeding pool (0.68), and 0.5 to account for sex ratios in the adult breeding population (Table 1). Baseline survival estimates were taken from the literature directly for immature (Watson et al. 2019), juvenile (Collins and Reynolds 2005), and adult life stages (Table 1; Watson and Pierce 2003). We assumed 47 initial occupied nesting territories (nesting territories or territories) based on the 2016 reporting (Hayes and Watson 2021).

**Table 1. Baseline vital rate parameter values for ferruginous hawk in Washington.**

Life Stage	Parameter	Value	Source(s)
Immature	Fecundity	0.00	Wheeler 2003, Ng et al. 2020
	Survival	0.62 <sup>a</sup>	Watson et al. 2019 <sup>b</sup>
Juvenile	Fecundity	0.00	Wheeler 2003, Ng et al. 2020
	Survival (Dispersal to Year 2)	0.43	Collins and Reynolds 2005
	Average Number of Nestlings	2.40	Hayes and Watson 2021
	Average Nest Success Rate	0.81	Hayes and Watson 2021
	Occupied Nesting Territories	0.68	Hayes and Watson 2021
Adult	Fecundity	0.66 <sup>c</sup>	Hayes and Watson 2021
	Survival	0.76	Watson and Pierce 2003
	Baseline # Occupied Nests (2016)	47	Hayes and Watson 2021
	Baseline # Breeding Pairs (2016)	32	Hayes and Watson 2021
	Average # Breeding Pairs (1978–2016)	54	Hayes and Watson 2021

<sup>a</sup> Range-wide estimate was used as it is more conservative than the Montana survival estimate of 0.86 (Zelenak et al. 1997)

<sup>b</sup> As reported in Hayes and Watson 2021

<sup>c</sup> Calculated from table 2 from Hayes and Watson 2021 (2.4 nestlings per nest × 0.81 success rate × 0.68 proportion breeding × 0.5 females)

We generated a 3×3 projection matrix from vital rate parameters to calculate baseline values for growth rate ( $\lambda$ ) using eigenanalysis to identify the dominant eigenvalue following Caswell (2001) and Stevens (2009). Additionally, the stable stage distribution (Table 2), elasticity, and sensitivity (Table 3) were calculated following Stevens (2009). We used the proportions from the stable stage distribution to calculate the initial abundance for each age class based on the 47 nesting territories observed in 2016 (Hayes and Watson 2021). We calculated sensitivity and elasticity of the projection matrices to determine how  $\lambda$  varied by the transitions between life stages. Sensitivity represented the effect a small change to the projection matrix would have on  $\lambda$  for each transition stage (i.e. immature to juvenile, juvenile to adult, adult mortality, or births). Elasticity represented the relative magnitude of effect that each transition has on  $\lambda$ .

**Table 2. Proportions and initial abundances of ferruginous hawk based on the stable-stage distribution calculated from the projection matrix, according to Caswell (2001).**

Parameter	Immature	Juvenile	Adult
Proportion	0.32	0.21	0.47
Initial Abundance <sup>a</sup>	32	21	47

<sup>a</sup> adult column represents the number of occupied nesting territories

**Table 3. Sensitivity and elasticity during life-stage transitions from eigenanalysis of the projection matrix.**

Parameter	Immature to Juvenile	Juvenile to Adult	Adult Mortality	Births
Sensitivity	0.27	0.39	0.67	0.17
Elasticity	0.12	0.12	0.36	0.12

### 3.1 Population Growth Model

This PVA incorporated demographic stochasticity to reflect the variation in vital rates caused by dynamics inherent to small populations, such as ferruginous hawk in Washington. Demographic stochasticity can have large impacts on population size estimates and are important to model for reliable population projections (Saeher and Engen 2002). Demographic stochasticity incorporated the fluctuating random probabilities that affect nest productivity, which included nest success, nest occupancy, and number of nestlings. To incorporate demographic stochasticity, we allowed all vital rates in the baseline projection matrix to vary from year to year. Vital rate variation was based on random sampling from a normal distribution based on the mean ( $\mu$ ) and standard deviation ( $\sigma$ ). The  $\sigma$  for average nest success ( $\mu = 0.81$ ,  $\sigma = 0.138$ ) and average number of nestlings ( $\mu = 2.4$ ,  $\sigma = 0.446$ ) were calculated from Hayes and Watson (2021). Nest occupancy and survival rates lacked published  $\sigma$ , therefore, a  $\sigma$  of 0.1 was used for these parameters to reflect a high level of uncertainty. Vital rates from the normal distribution were restricted so reasonable biological levels (within  $\sigma$ ) were not exceeded. The model assumes that the net influence of immigration or emigration was zero.

Although we do not explicitly incorporate environmental stochasticity into the PVA, we acknowledge the effect of extrinsic environmental factors on ferruginous hawk nesting populations. Annual fluctuations in climate (e.g., temperature, precipitation), habitat quality (e.g., prey availability), and catastrophic events (e.g., wildfire, disease) can all affect ferruginous hawk populations and the underlying vital rates (Wallace et al. 2016a, Shoemaker et al. 2019, Squires et al. 2021). For example, annual fluctuations in the spatial and temporal variability of prey abundance affects age-specific survival rates (Collins and Reynolds 2005, Hayes and Watson 2021). Environmental stochasticity was not directly modeled in this effort; however, the variation in occupancy and nestling counts from Hayes and Watson (2021) from 1978–2016 enabled us to vary fecundity in our model in a way that likely reflects the inherent environmental fluctuations that could impact this population.

### 3.2 Model Scenarios

Population models were simulated over 30 years based on the anticipated life expectancy of the Project. The average population sizes and  $\sigma$  were calculated across 10,000 model iterations for each model scenario. First, we modeled a baseline population trend for all model scenarios using the vital rates in the projection matrix, no annual take, and the initial abundance established from the stable stage distribution (Figure 2). To compare the mean baseline population trend with historical occupancy data, we graphed historical counts of occupied territories, occupied territories with known breeding outcomes, and successful territories reported in Hayes and Watson (2021) against the predicted territory occupancy trend (Figure 3). Historical occupancy data were unadjusted for inter-annual survey effort and survey areas, which were unavailable. The mean  $\sigma$  and final population sizes from the 10,000 iterations are reported with 90% CIs (Appendix A).

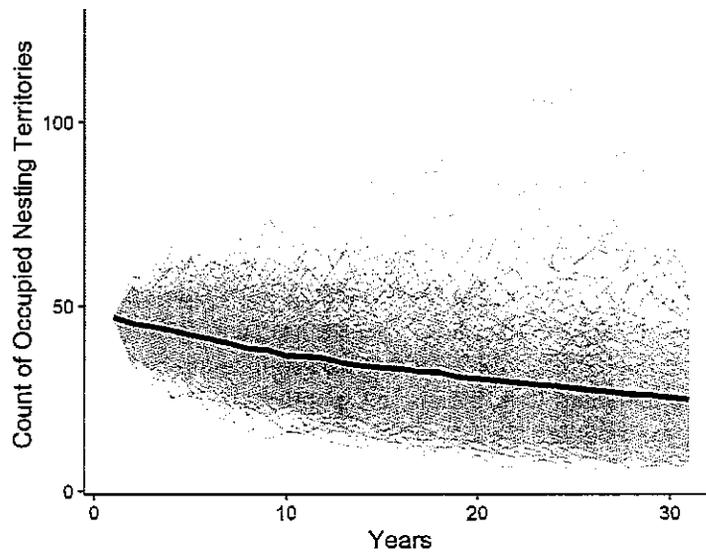
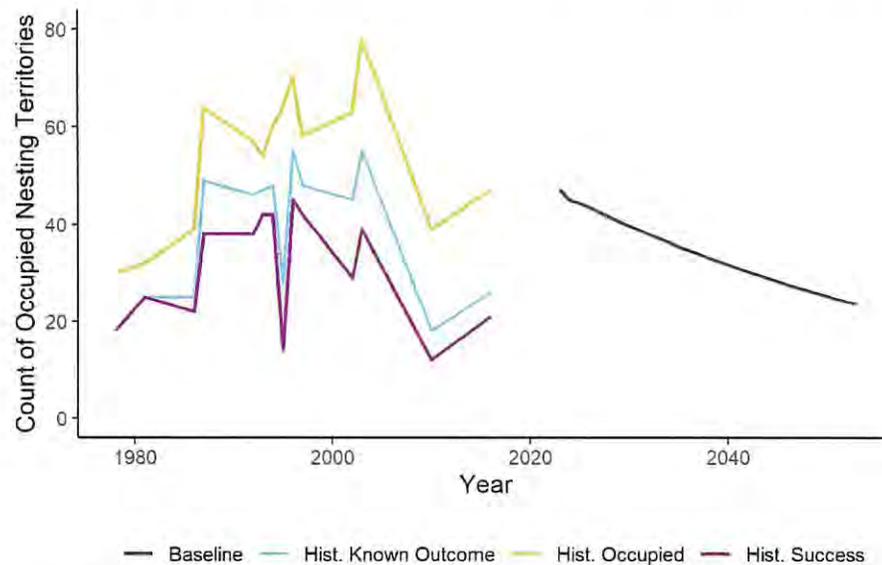


Figure 2. Baseline 30-year predicted trend for occupied nesting territories based on the projection matrix values derived from the literature. Each grey line represents one of the first 300 of 10,000 iterations to visualize variability.



**Figure 3. Comparison of historical occupied nesting territories, with the mean baseline predicted trend of occupied nesting territories from 10,000 iterations.**

Direct and indirect effects were modeled separately and together to illustrate the relative effect on the population. We report decimals of territories instead of whole numbers to better illustrate the variation in the model results. Population benefits resulting from the construction and use of artificial nest platforms used the combined effects to simulate the biological response of increased nesting success. To simulate the effects on population trends from Project impacts and conservation efforts, we modeled the following scenarios:

- Direct effect from wind turbine collision considering low-, medium-, and high-effect scenarios (defined below);
- Indirect effect from loss of available nesting territories considering removal of one, two, or three territories;
- Direct and indirect effects from Project operations considering a combination of effects; and
- Artificial nest platform construction and use considering variable occupancy levels.

### 3.2.1 Direct Effect Scenario

We simulated population trends that reflected variable levels of mortality from turbine collision to provide a range of possible population effects. We used fatality counts from publicly available post-construction fatality monitoring (PCFM) studies at multiple spatial scales to develop a biologically realistic range of mortality scenarios. Count data was used because many of the fatalities were found outside of standardized PCFM when the estimation process was not possible, species-specific fatality estimates were unavailable, or study designs lacked rigor in one

or more areas. Because of the discrepancies, count data provided a larger sample size of studies conducted within a particular region and was used to standardize the enumeration of ferruginous hawk fatalities across regions. Fatality count data were unadjusted for searcher efficiency or carcass persistence; thus, the range of fatalities should be considered a conservative estimate within each region. We quantified the number of fatalities documented during PCFM in the US, the CPE, and Washington (Table 4).

- Within the US, there were 40 ferruginous hawk fatalities reported from 20 operational wind facilities, 1996–2021 (WEST 2022).
- Within the CPE, there were eight ferruginous hawk fatalities reported from six operational wind facilities, 1999–2020 (WEST 2022).
- Within Washington, there were four ferruginous hawk fatalities reported from two operational wind facilities, 1999–2020 (WEST 2022).

**Table 4. Regional ferruginous hawk fatalities recorded during post-construction fatality monitoring studies at operational wind energy facilities, 1996–2021.**

Region	# Years	Fatality Age Group			Total Fatalities	Fatality Rate <sup>a</sup>
		Adult	Juvenile	Unknown		
United States	25	9	6	25	40	1.60
Columbia Plateau Ecoregion	21	5	1	2	8	0.38
Washington	21	3	1	0	4	0.19

<sup>a</sup> calculated as Total Fatalities ÷ # Years

To derive a range of fatality rates used to estimate direct effects, we used region-specific ferruginous hawk PCFM data divided by the total number of years of PCFM data available in the region to calculate a fatality rate, multiplied by 30 years, and rounded up to the nearest whole bird. The range of direct effect estimates were classified into three levels: low, intermediate and high. We used fatality rates from the CPE and Washington to calculate a high (12 fatalities/30 years) and low (six fatalities/30 years) level, respectively, and split the difference between estimates for the intermediate (nine fatalities/30 years) level. The US fatality rate was not used because it would exceed the entire size of the CPE breeding population.

Direct effects on ferruginous hawk populations were predicted by varying age specific survival in the projection matrix for low, intermediate, and high levels of fatalities. Because Hayes and Watson (2021) suggested a bottleneck exists for earlier life history stages, we implemented direct effects in age specific patterns. In one set of models, predicted fatalities were applied to just adults, whereas in another set of models, fatalities were split evenly between adult and juvenile age classes.

### 3.2.2 Indirect Effect Scenario

Indirect effect scenarios were evaluated by varying the fecundity parameter in the projection matrix to reflect biologically realistic reductions of nesting territories. The three scenarios reflect a permanent removal of one, two, or three nesting territories across the 30-year period. Removal

of a nesting territory may result from the permanent abandonment due to disturbance or displacement or from land conversion to unsuitable habitat types that may cause territory loss.

### 3.2.3 *Combined Direct and Indirect Effects Scenario*

We simulated the combined impacts of direct and indirect effects by incorporating both into the models.

### 3.2.4 *Artificial Nest Platform Scenario*

Artificial nest platforms have been demonstrated as an effective mitigation and habitat-enhancement tool that provide supplemental nesting substrates in areas where nests have been destroyed or substrates were not available (Tigner et al. 1996, Wallace et al. 2016b). Artificial nest platform scenarios were incorporated into the modeling to determine population responses from the use of artificial nest platforms. These scenarios assume that direct and indirect effects occur as described above, but incorporate an increase in fecundity from artificial nest platform use and resulting nesting success. For an artificial nest platform to be successful in this scenario, it must be additive to the breeding population and increase breeding success, and not result in relocation of a presumably successful breeding pair to an artificial nest platform.

To determine anticipated platform occupancy for each scenario, we calculated the average annual artificial nest platform occupancy from a review of nine studies over 53 study years in the US and Canada, 1976–2019 (Table 5). Nest occupancy varied widely in the studies that cumulatively surveyed 1,155 nests with an average annual occupancy of 36% ± 24% (Table 5). We used this average annual occupancy value to model possible effects from the addition of three, seven, and 10 artificial nest platforms within the CPE.

**Table 5. Annual ferruginous hawk nest occupancy of artificial nest platforms (ANP)**

Survey Year	# ANP	# ANP Occupied	% Occupied	Location	Reference
1976-2004 <sup>a</sup>	105	64	61	Wyoming, US	Neal 2007
1976	97	2	2	Alberta, Canada	Schmutz et al. 1984
1977	98	4	4	Alberta, Canada	Schmutz et al. 1984
1981	81	11	14	Alberta, Canada	Schmutz et al. 1984
1982	81	12	15	Alberta, Canada	Schmutz et al. 1984
1983	78	11	14	Alberta, Canada	Schmutz et al. 1984
1988	25	11	44	Wyoming, US	Tigner et al. 1996
1989	54	34	63	Wyoming, US	Tigner et al. 1996
1990	61	33	54	Wyoming, US	Tigner et al. 1996
1991	65	41	63	Wyoming, US	Tigner et al. 1996
1992	71	37	52	Wyoming, US	Tigner et al. 1996
1993	71	29	41	Wyoming, US	Tigner et al. 1996
2009	130	45	35	Alberta, Canada	Migaj et al. 2011
2013 <sup>b</sup>	27	18	67	Wyoming, US	Wallace et al. 2016
2016	2	1	50	Alberta, Canada	Kemper et al. 2020
2017	3	2	67	Alberta, Canada	Kemper et al. 2020
2017-2018 <sup>c</sup>	57	5	9	Utah, US	Hopkins 2019
2018	2	0	0	Alberta, Canada	Kemper et al. 2020
2019	2	1	50	Alberta, Canada	Kemper et al. 2020
2019	16	6	38	Alberta, Canada	Parayko et al. 2021
2019 <sup>d</sup>	29	2	7	Washington, US	Hayes and Watson 2021
<b>Total</b>	<b>1155</b>	<b>369</b>	<b>32<sup>e</sup></b>		
<b>Mean</b>	<b>55</b>	<b>18</b>	<b>36</b>		
<b>St.Dev.</b>	<b>38</b>	<b>18</b>	<b>24</b>		

<sup>a</sup> Annual occupancy ranged from 52.1–69.7% - median (60.9%) calculated for simplicity

<sup>b</sup> Re-occupancy = 0.66 (95% confidence interval = 0.10–0.97)

<sup>c</sup> 32 ANP in low predicted nesting likelihood, 25 ANP in medium to high

<sup>d</sup> Undetermined level of survey effort, construction and survey occurred same year

<sup>e</sup> Total # ANP occupied ÷ Total # ANP surveyed: 369 ÷ 1,155 = 32% overall

## 4 RESULTS

Based on eigenanalysis of the projection matrix, adult mortality was affected disproportionately more than other life stages by small shifts in vital rates with a value of 0.67 (Table 3). Fecundity or births demonstrated the lowest sensitivity (0.12) compared to other life stages; however, our effect scenarios did not reflect this pattern which showed more stable patterns when vital rates varied between age classes and fecundity.

The baseline scenario revealed that occupied nest outcomes can vary widely (Figure 2), likely due to the small population size and uncertainty in vital rates. However, even with this uncertainty the 90% CI for the average  $\lambda$  of 0.9776 (90% CI: 0.9774–0.9779) and the mean number of nesting territories after 30-years, 23.52 (90% CI: 23.31–23.74) resulted in narrow CI across all 10,000 iterations (Appendix A). Mean  $\lambda$  for the baseline scenario was an annual population decline of 2.2% (Appendix A). Effect scenarios are discussed in further detail, below.

#### 4.1 Direct Effect Scenario

The low direct effect scenario simulating six adults over 30 years resulted in 52% fewer nesting territories (22.71; 90% CI: 22.5–22.93), than the starting number of territories (47). The difference in nesting territories between the low direct effect scenario and the baseline was 3.5% (difference of one nest), indicating a similar outcome after 30 years. Mean  $\lambda$  for the low direct effect scenario was 0.9764 (90% CI: 0.9761–0.9767), resulting in an average 2.4% annual population decline.

Low juvenile survival that reduced the number of birds reaching reproductive age has been suggested as a mortality bottleneck affecting population growth (Hayes and Watson 2021). However, our simulations did not result in a more rapid population decline when mortality rates were split evenly between adults and juveniles (Figure 4). Direct effect models focusing on only adult fatalities resulted in a range of 19.05–22.71 nesting territories after 30 years, whereas models that split fatalities between adult and juvenile age classes resulted in approximately one fewer nesting territories after 30 years (18.26–21.41 territories; Appendix A).

#### 4.2 Indirect Effect Scenario

The removal of nesting territories resulted in more substantial declines in nesting territories (Figure 5) compared to variability in adult or juvenile survival (Figure 4). Reduction of one to three territories resulted in 19.34 to 12.73 (of 47) nesting territories remaining after 30 years, whereas low to high fatality rates (direct effects) resulted in 22.71 to 19.05 nesting territories. Compared to the baseline, removing one nesting territory across all years resulted in a 59% decline (from 47 to 19.34 territories [90% CI: 19.16–19.51]) in nesting territories after 30 years, and  $\lambda$  of 0.9708 (90% CI: 0.9705–0.971; Appendix A). Removal of three nesting territories decreased the predicted number of nesting territories nearly 73% from a starting baseline of 47 nesting territories to 12.73 territories after 30 years.

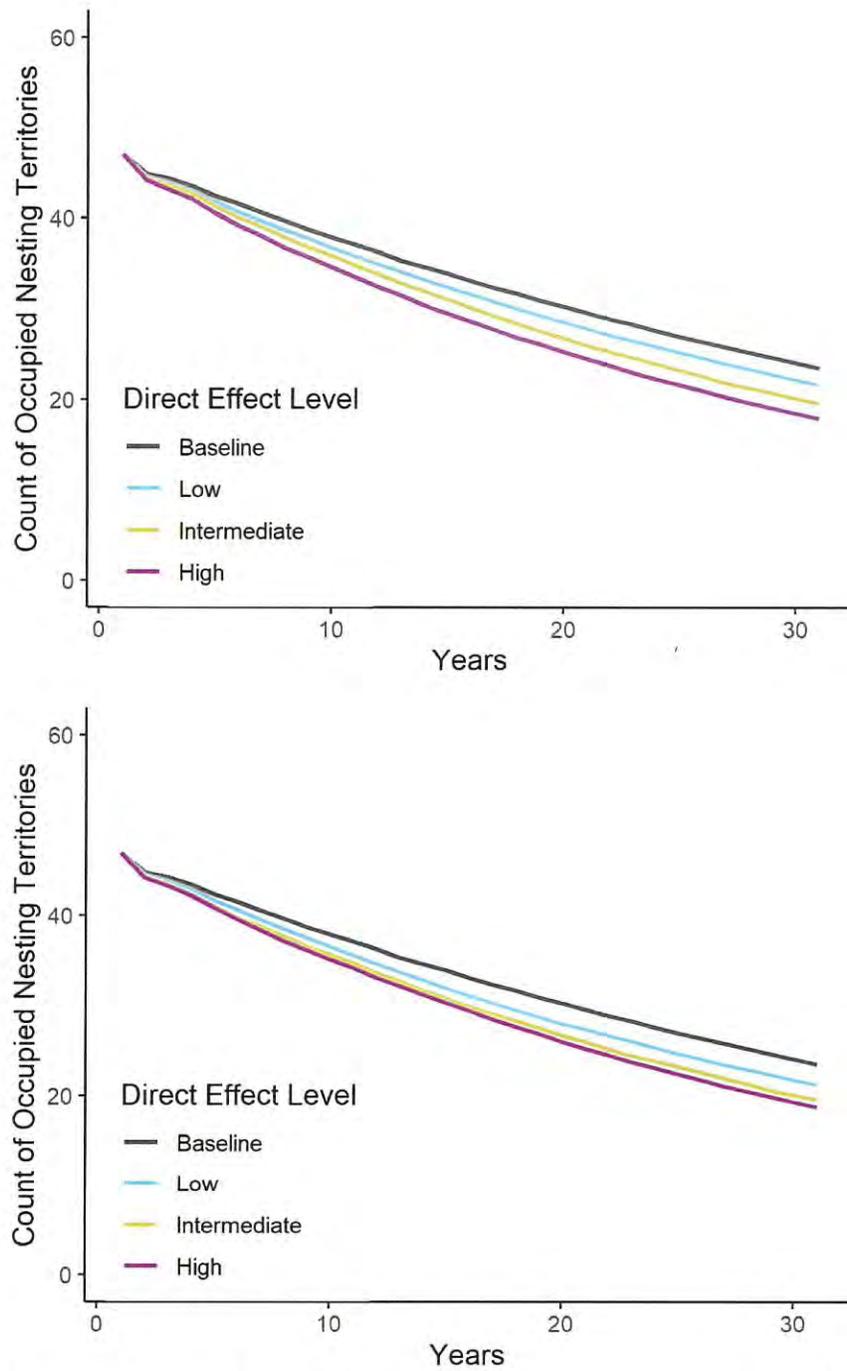


Figure 4. Predicted trend of occupied nesting territories accounting for direct effects to adults (top) and split evenly amongst adults and juveniles (bottom).

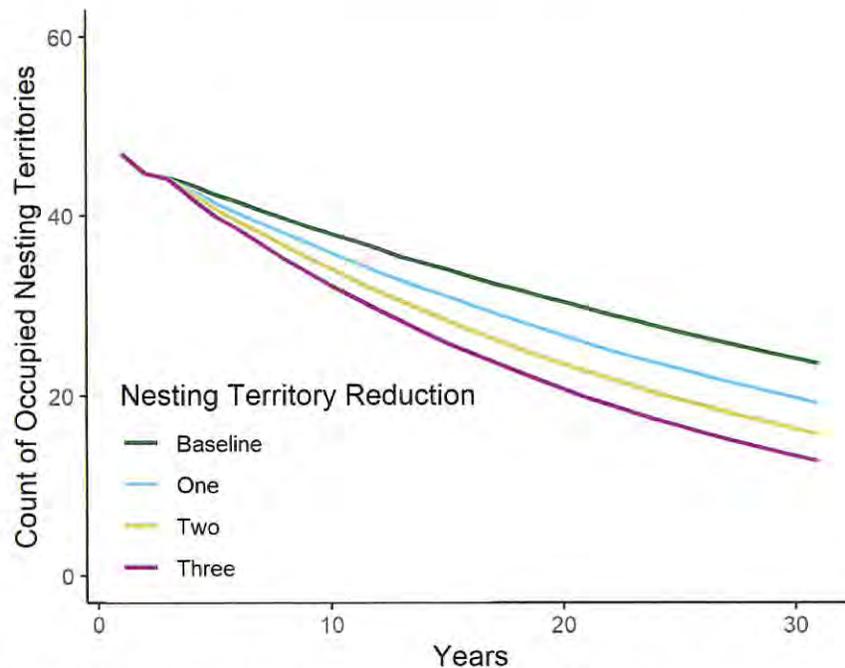


Figure 5. Predicted trend of occupied nesting territories accounting for indirect effects of nesting territory reduction.

#### 4.3 Combined Direct and Indirect Effects Scenario

Population trends declined more substantially when the scenarios of reduced survival and declining territory occupancy were combined. Low direct effects and reduction of one nesting territory predicted 18.27 nesting territories remaining after 30 years, whereas high direct effects and reduction of three nesting territories predicted 10.12 territories after 30 years (Figure 6).

The difference in the magnitude of the effect is seen when compared with the baseline (Figure 6). The combined scenario of low fatality rates and reduction of one nesting territory resulted in a reduction of five nesting territories when compared to the baseline, and  $\lambda$  of 0.9694 (90% CI: 0.9691–0.9696; Figure 6; Appendix A). High direct effect levels and three removed territories resulted in 2.5 times fewer territories compared to baseline, and  $\lambda$  of 0.9495 (90% CI: 0.9492–0.9498; Figure 6; Appendix A). The corresponding average population decline was 2.2% for the baseline scenario compared with a 5.1% average annual decline for the combined high direct and indirect effect scenarios.

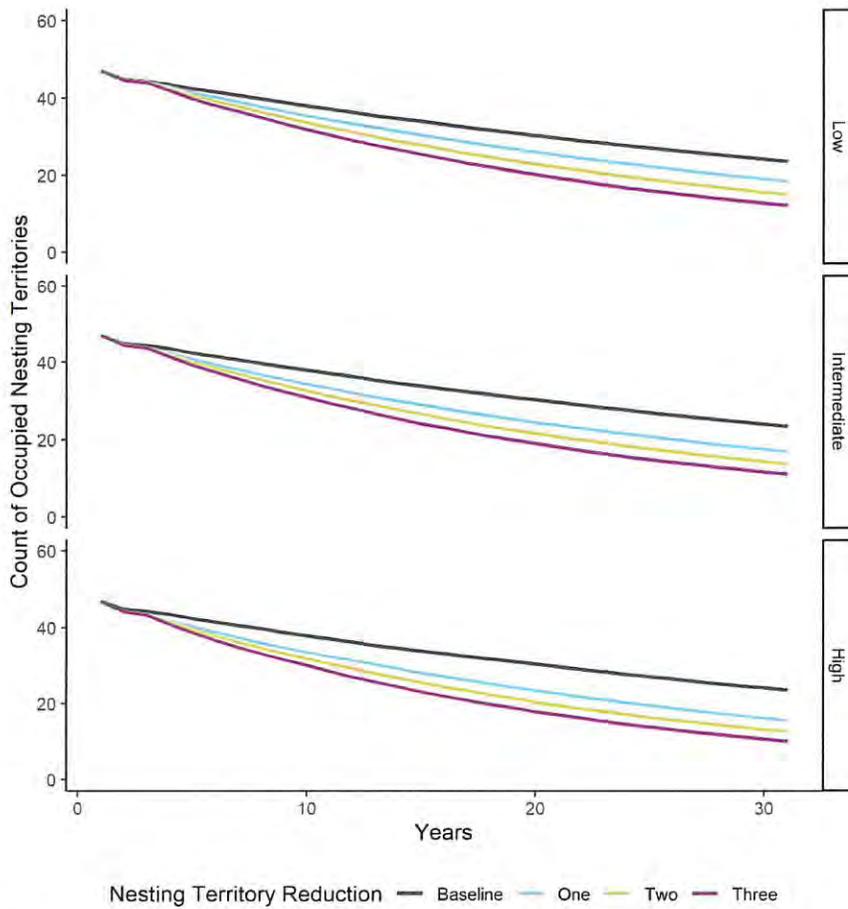


Figure 6. Predicted trend of occupied nesting territories accounting for direct effects (low, intermediate, and high) and indirect effects (reduction of one, two, or three nesting territories).

#### 4.4 Artificial Nest Platform Scenario

Predicted  $R_0$  for baseline, direct effect, indirect effect, and combined effects was always below 1.00, resulting in declining population trends across all scenarios (Appendix A). However, simulations incorporating artificial nest platforms resulted in a positive values of  $R_0$  corresponding with an increase in successful breeding pairs in the population due to the construction and use of artificial nest platforms (Figure 7). Offsetting the effects of low or intermediate direct effects and the reduction of one occupied territory would require three artificial platforms to be constructed with an average annual occupancy of 36% (Appendix A). If high levels of direct effects occur, then seven artificial platforms are needed to return the number of nesting territories above baseline. Across all three levels of direct effects, 10 new territories are necessary to achieve a positive trend in nesting territories (Figure 7).

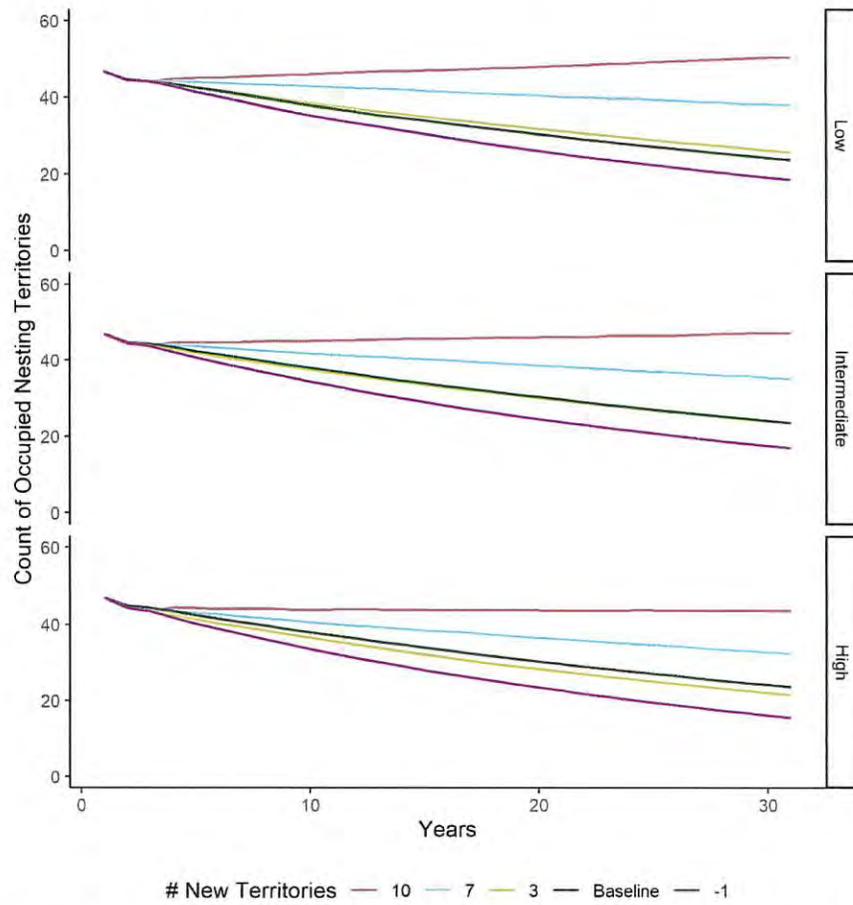


Figure 7. Predicted trend of occupied nesting territories accounting for direct effects (low, intermediate, high), indirect effects (reduction of one nesting territory), and construction of three, seven, and ten artificial nest platforms, assuming 36% occupancy.

## 5 DISCUSSION

Based on published vital rates and population estimates, our baseline model simulated a ferruginous hawk population with an annual average decline of approximately 2.4% over the next 30 years. By adjusting the simulated levels of turbine-related mortality and permanent loss of nesting territories, population trajectories showed a comparatively greater response to the loss of nesting territories than collisions (the loss of individual birds). Population trends did not respond to disproportionate effects to adult or juvenile age classes, suggesting age structure of turbine-related mortality has less of an affect than loss of a nesting territory or the removal of an individual from the population. When the effects of the scenarios were combined, the resulting influence to the population trends were magnified more than the influence of one effect alone. Our models simulated how the construction and use of artificial nest platforms, a common mitigation measure, could be used to mitigate the effects of Project operation.

As described above, simulations of the baseline population without the additive effects of increased mortality or loss of territories resulted in declining population trends for ferruginous hawk in Washington. Trend results corresponded with a -1.59% annual change (97.5% CI: -7.01–3.66) in Washington based on BBS data, from 1999–2019 (Sauer et al. 2019). Although statistically insignificant with credible intervals that included zero, BBS trend data in Washington reflected the patterns of declining nest occupancy, productivity, and nesting pairs observed over the last four decades (Hayes and Watson 2021). Despite the observed stability of ferruginous hawk populations across the US, Diffendorfer et al. (2021) modeled the vulnerability in maintaining a stable or positive  $\Delta$  from current (106 gigawatt [GW]) and future (241 GW) installed wind energy generation scenarios and found ferruginous hawk was comparatively more susceptible to changes in  $\Delta$  from turbine-related mortality compared to other species. In our study, localized effects on a small, declining population exposed to a myriad of existing environmental stressors unrelated to wind energy resulted in increased sensitivity to changes in demographic vital rates and  $\Delta$

In our PVA, there was no substantial change in population trends when the age structure of the survival parameter varied between adult and juvenile. Previous raptor research has shown adult survival can influence population viability (see Newton et al. 2016); however, the effect of low juvenile survival has been noted as a constraining factor in Washington populations of ferruginous hawks (Hayes and Watson 2021). The relatively equal effect of age class on population trends over a 30-year period perhaps underscores the demographic importance of all age classes, particularly for small populations. The reduced influence of adult survival on population trends compared to territory loss may suggest emigration of individuals into the breeding population during the non-breeding season or non-breeding “floaters” that replace breeding adults when densities decrease and breeding space becomes available (Watson and Keren 2019, Parayko et al. 2021).

Our scenarios show that the indirect loss of a nesting territory can have a greater affect than the direct loss of an individual and when combined, can substantially influence  $\Delta$ . Although nesting territories were not identified as a limiting factor in the Recovery Plan or status report

(Richardson 1996, Hayes and Watson 2021), loss of historical nesting territories and surrounding foraging habitat resulting from agricultural conversion, wildfire, reduced prey availability, urbanization and other anthropogenic sources have decreased or eliminated the suitability of nest sites over the ferruginous hawk breeding range in Washington. Efforts to increase availability of nesting territories through construction of artificial nest platforms in otherwise suitable areas lacking natural substrates can increase the number of nesting sites in a territory. Assuming an average annual occupancy rate of 36%, increases of three nesting territories may return the population trend to baseline conditions while 10 nesting territories may result in positive ferruginous hawk population trends.

Future PVAs could be refined to consider a range of probable fatalities based on annual fatality estimates from PCFM studies that adjust for searcher efficiency and carcass persistence. Count data excludes biases associated with carcass detection probabilities inherent with PCFM and thus is a coarse approximation we used to define a range of potential fatalities across spatial scales and not the biological reality that may occur. Despite the use of count data, we believe the relative magnitude in the effect of each scenario is representative of the biological response provided the same vital rates are considered. We want to acknowledge that the confidence intervals in Appendix A are narrower than we might expect for simulated ecological data suggesting that the data inputs are more precise than we might observe during the 30-year analysis period.

Our analysis scenarios demonstrate that reduced survival and territory occupancy can have synergistic effects on ferruginous hawk populations. Depending on the magnitude of the effects, the cumulative result of direct and indirect effects on small populations can substantially affect viability. The decrement in population growth from the loss of territories or individuals is not biologically restricted to wind energy development. As discussed in WDFW's Recovery Plan and Periodic Assessment, conversion and fragmentation of native habitats to agriculture and urbanization and the use of rodenticides and pesticides result in an increasingly human-disturbed landscape that affect ferruginous hawk populations (Richardson 1996, Hayes and Watson 2021). In addition to the installation of nesting platforms, WDFW discussed a range of conservation efforts including more comprehensive monitoring and research, increased funding and emphasis placed on habitat management and enhancement programs<sup>3</sup>, reduced application of industrial chemicals, and strategic conservation planning that minimizes encroachment into unfragmented native habitats can result in incremental benefits (Richardson 1996, Hayes and Watson 2021). Mitigation of stressors that affect population trends should continue across the broad range of factors that impact ferruginous hawk nesting and foraging habitat in order to maintain viability of local populations over time.

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<sup>3</sup> Examples of habitat management or enhancement programs include, but are not limited to, the US Department of Agriculture, Farm Service Agency's Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), State Acres for Wildlife Enhancement (SAFE), or the Washington Wildlife and Recreation Program (WWRP)

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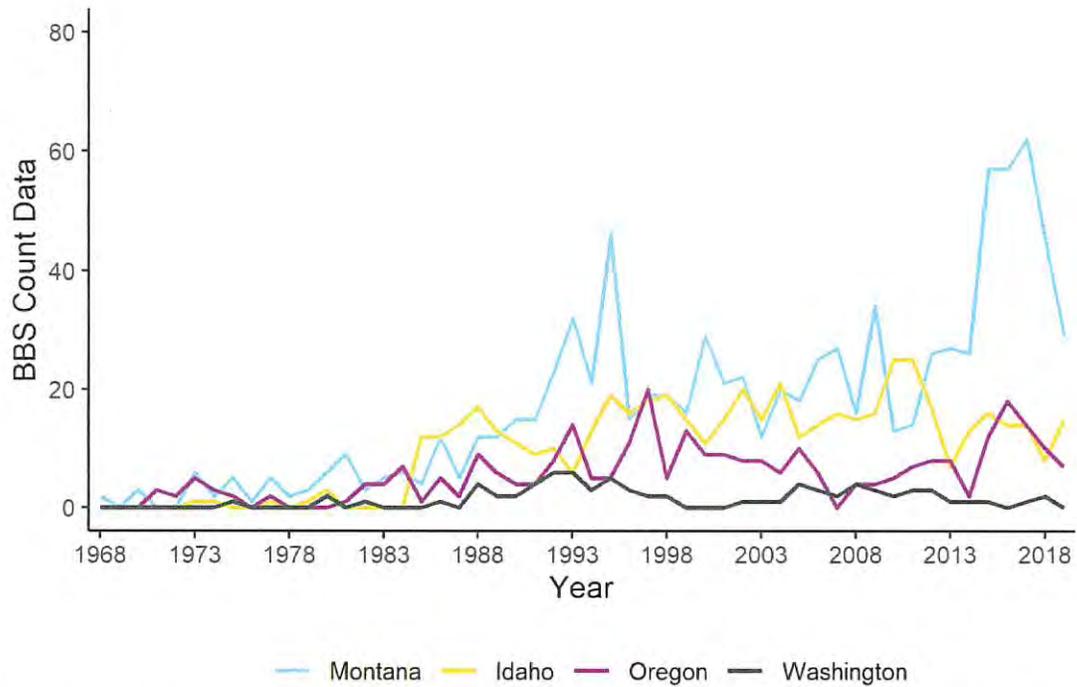
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Appendix A1. Predicted  $\lambda$  and occupied nesting territories for each scenario after 30-years.

Scenario	Direct Effect Level	Indirect Effect Level	Added Nesting Territories	$\lambda$	$\lambda$ 90% CI	# Territories	Territories 90% CI
Baseline	-	-	-	0.9776	0.9774-0.9779	23.52	23.31-23.74
Direct Effects Low	Low	-	-	0.9764	0.9761-0.9767	22.71	22.5-22.93
Direct Effects Intermediate	Intermediate	-	-	0.9736	0.9733-0.9739	20.78	20.58-20.97
Direct Effects High	High	-	-	0.9708	0.9705-0.971	19.05	18.87-19.23
Direct Effects (Adults and Juveniles) Low	Low	-	-	0.9746	0.9744-0.9749	21.41	21.22-21.61
Direct Effects (Adults and Juveniles) Intermediate	Intermediate	-	-	0.9736	0.9734-0.9739	20.87	20.68-21.07
Direct Effects (Adults and Juveniles) High	High	-	-	0.9694	0.9691-0.9696	18.26	18.09-18.43
Indirect Effects	-	1	-	0.9708	0.9705-0.9711	19.34	19.16-19.51
Indirect Effects	-	2	-	0.9639	0.9636-0.9641	15.68	15.54-15.83
Indirect Effects	-	3	-	0.9566	0.9564-0.9569	12.73	12.61-12.85
Combined Effects Low	Low	1	-	0.9694	0.9691-0.9696	18.44	18.27-18.6
Combined Effects Intermediate	Intermediate	1	-	0.9667	0.9664-0.967	16.96	16.8-17.12
Combined Effects High	High	1	-	0.964	0.9638-0.9643	15.6	15.46-15.75
Combined Effects Low	Low	2	-	0.9624	0.9621-0.9627	15.05	14.91-15.19
Combined Effects Intermediate	Intermediate	2	-	0.9597	0.9595-0.96	13.79	13.66-13.92
Combined Effects High	High	2	-	0.9569	0.9566-0.9571	12.6	12.48-12.71
Combined Effects Low	Low	3	-	0.9552	0.9549-0.9555	12.14	12.03-12.25
Combined Effects Intermediate	Intermediate	3	-	0.9525	0.9522-0.9528	11.15	11.04-11.25
Combined Effects High	High	3	-	0.9495	0.9492-0.9498	10.12	10.03-10.22
Artificial Nest Platform Credit Low	Low	1	3	0.9807	0.9804-0.9809	25.61	25.38-25.85
Artificial Nest Platform Credit Low	Low	1	7	0.994	0.9937-0.9943	37.87	37.51-38.22
Artificial Nest Platform Credit Low	Low	1	10	1.0044	1.0041-1.0046	50.68	50.22-51.15
Artificial Nest Platform Credit Intermediate	Intermediate	1	3	0.9779	0.9776-0.9782	23.52	23.3-23.74
Artificial Nest Platform Credit Intermediate	Intermediate	1	7	0.9917	0.9914-0.992	35.02	34.7-35.34
Artificial Nest Platform Credit Intermediate	Intermediate	1	10	1.002	1.0017-1.0022	47.15	46.71-47.6
Artificial Nest Platform Credit High	High	1	3	0.9749	0.9747-0.9752	21.48	21.28-21.68
Artificial Nest Platform Credit High	High	1	7	0.989	0.9887-0.9893	32.35	32.04-32.65
Artificial Nest Platform Credit High	High	1	10	0.9991	0.9989-0.9994	43.44	43.03-43.86

CI = confidence interval



**Appendix A2. Breeding Bird Survey count data by state for the northwestern United States. Washington historically has had low numbers relative to other states. Interannual and interdecadal counts appears high, although differences were not quantified. The number of routes surveyed increased until the early 1990s before remaining relatively consistent. Therefore, any perceived population growth from 1968 through 1993 is likely the result of survey effort.**