

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

PREFILED DIRECT TESTIMONY OF
MARK NUETZMANN

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Q Please state your name and employer.

A Mark Nuetzmann; Confederated Tribes and Bands of the Yakama Nation (“Yakama Nation”).

Q What is your position with Yakama Nation?

A I am employed as a Wildlife Biologist within the Yakama Nation Wildlife Resource Management Program (“YN-WRMP”).

Q What does your position entail?

A My main duties are to assess effects of projects on listed, sensitive, or culturally important species. Projects include timber sales proposed by the Bureau of Indian Affairs on tribal trust lands. Within the last several years I have been tasked with looking at effects of renewable energy projects within the Ceded Lands of Yakama Nation on animal species.

Q How long have you worked as a wildlife biologist with YN-WRMP?

A 21 years.

Q Are you familiar with the Project at issue in Docket No. EF-210011 (“Project”)?

A Yes.

Q What qualifications, education, or certifications do you have to testify regarding the Project’s impacts?

A I received a Bachelor of Science in Zoology from the University of Washington in 1991 and a Master of Science in Biology from Eastern Washington University in 2001.

Q What documents have you reviewed in preparing this testimony?

A I have reviewed the original Application for Site Certification (“ASC”) with selected Appendices, the updated ASC with selected appendices, and portions of the Draft Environmental Impact Statement (“DEIS”) published December 19, 2022.

Q After reviewing the Project’s application and corresponding appendices, do you have concerns about the Project’s impacts on the local Ferruginous Hawk population?

A Yes.

Q What are those concerns?

A While the majority of the Project area can be considered less than ideal habitat for the Ferruginous Hawk, that does not mean that the species does not use or would not be affected by development in these habitats. For example, Ferruginous Hawks will use agricultural land (irrigated) and dry croplands to forage for food. Leary et al. found that radioed Ferruginous Hawks in and around the Hanford site hunted in an irrigated agricultural field (up to 7 km away from their nest area).¹ Prey in the irrigated fields were likely northern pocket gophers or ground squirrels.² Irrigated croplands are directly south of the Project lease boundary, and access to that potential prey source would be impacted by the wind turbines.

In addition, the solar arrays will cover 6,276 acres, of which 5,314 acres on agricultural land and 963 acres on grassland and shrubland. While conversion of native grass land and shrub steppe to agricultural land has primarily been to the detriment of the species, Ferruginous Hawks do utilize agricultural edges that can support an abundance of northern pocket gophers.³ While the additional loss of grasslands and shrublands (including modified habitat discussed below) would be the most detrimental to the species, the effective loss of foraging habitat along the agricultural edges would also have negative impacts.

¹ Alan W. Leary, Mazaika Rosemary, and Marc J. Bechard, *Factors affecting the size of Ferruginous Hawk home ranges*, THE WILSON BULLETIN, 198-205 (1998).

² *Id.*

³ Janet Ng, Matthew D. Giovanni, Marc J. Bechard, Joseph K. Schmutz, and Peter Pyle, *Ferruginous Hawk Buteo regalis*, THE BIRDS OF NORTH AMERICA, CORNELL LAB OF ORNITHOLOGY, available at <https://doi.org/10.2173/bna.ferhaw.02> (last visited June 8, 2023).

Q Washington Department of Fish & Wildlife (“WDFW”) has stated publicly that the Project’s “. . . subsequent landscape-scale impact to an important habitat and ecological connectivity will be difficult if not impossible to mitigate.”⁴ Do you agree with that statement?

A Yes.

Q Why?

A The Project is the largest renewable energy project in the State of Washington by far, and WDFW has stated that the proposed solar development is over three times as large as any single solar project being constructed or proposed in the State. The Project covers almost 73,000 contiguous leased acres and spans nearly 27 miles along the Horse Heaven Hills. The impact of a project of this scope and this size on wildlife and habitat is difficult to accurately predict, especially when considering cumulative impacts from future renewable energy projects.

Q How will habitat fragmentation due to the Project impact surrounding ecological systems and functions?

A In general, as habitat becomes more fragmented, it becomes increasingly difficult for species that are dependent on that habitat to function. Scale is important here as some species require larger home ranges than others. So, habitat fragmentation may impact species differently. A home range of a Ferruginous Hawk can vary greatly depending on

⁴ Letter from Michael Ritter, WDFW Area Habitat Biologist & Statewide Technical Lead: Wind and Solar, to Amy Moon, EFSEC (April 1, 2021) Available at: https://www.efsec.wa.gov/sites/default/files/210011/00024/A0004_WDFW_Rvw3.pdf (last visited June 8, 2023).

availability of food. For any species, loss of habitat due to fragmentation causes an individual to expend more energy and time searching for food, which impacts its ability to successfully breed in that landscape.

Q In a draft environmental impact statement for the Project, EFSEC stated that “Operation of the comprehensive Project operation is predicted to have a medium impact on barriers to wildlife movement and habitat fragmentation that is long term, probable, and confined to the Lease Boundary.”⁵ Do you agree with that statement?

A I agree that impacts will be long term, probable, and confined to the Lease Boundary. At issue is the magnitude of impact.

Q Why?

A A medium magnitude impact is described as: The incremental change is expected to result in a clearly defined change that could result in changes to the population over shorter and longer periods of time; however, it remains below a level of impact that could exceed the resiliency and adaptability limits of the population.

A high magnitude impact is described as: The incremental change is sufficiently large that it approaches or falls within the range of impacts that could exceed the resilience and adaptability of the species or population, potentially impacting the viability of the species or population.⁶

⁵ DEIS, at 4-164 § 4.6.2.2.

⁶ DEIS at Table 4.6.2, § 4.6.1.

This question is essentially asking if the Project will impact the Ferruginous Hawk to such an extent that it will cause the extirpation of the species in the State. I don't think there is enough evidence to categorically determine that. The Project will surely have *at least* a medium magnitude impact, but neither I nor EFSEC have enough information at this time to say for sure that it would or wouldn't have a high magnitude impact.

Q Have you reviewed the proposed habitat mitigation for the Project?

A Yes.

Q Do you have any concerns about the mitigation proposals specific to the Ferruginous Hawk?

A Yes.

Q What are those concerns?

A The Project will directly remove available habitat for the Ferruginous Hawk. There are 779 Mitigation acres total for Project (Turbine Option 1).⁷ These include mitigation for temporary, permanent, and modified habitat. Mitigation ratio ranges from 0.1:1 (temporary impact of grasslands) to 2:1 (permanent impacts to shrubland). There is no mitigation for agriculture or disturbed land.

⁷ Updated ASC, Appendix L, "Draft Wildlife and Habitat Mitigation Plan," Table 5, page 23.

The habitat mitigation ratios were developed for modified habitat 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.⁸

I disagree with the classification of “modified habitat” for areas where solar arrays are proposed to be placed. The 0.5:1 ratio for rabbitbrush shrubland and sagebrush shrub-steppe habitat subtypes is the same ratio used for temporary impacts for these habitat subtypes.⁹ Habitats within the fenced area of the solar arrays 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. While the habitat found underneath the solar arrays may not be permanently modified, they are habitats that will be avoided by Ferruginous Hawks, a species with an aversion to development.

It can be argued that as it relates to the Ferruginous Hawk, the mitigation ratio used for permanently modified habitat better represents the impact to the species during the 30-year lifespan of the Project. Modeling from the Applicant’s Population Viability Analysis (discussed below) developed for the Project predicts that when using the baseline population growth rate, the number of occupied nesting territories would nearly be cut in half from 47 to 24 nesting territories over the 30-year period.¹⁰

⁸ See *Washington Department of Fish and Wildlife Wind Power Guidelines*, WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, 30 (2009).

⁹ Updated ASC, Appendix L at Table 4, page 18.

¹⁰ Erik W. Jansen and Jared K. Swenson, *Population Viability Analysis of Ferruginous Hawk (*Buteo regalis*) in Eastern Washington*. WESTERN ECOSYSTEMS TECHNOLOGY, INC. (Nov. 14, 2022).

963 acres of “modified” grassland and shrubland at 0.5:1 mitigation ratio comes to 481 mitigation acres. This new “impact level” for solar impacts has not been previously or independently evaluated and instead appears to be a reflection of conversations between the applicant, WDFW, and EFSEC.¹¹ While the solar arrays may not meet the standard of a permanent impact that were developed for wind energy projects, the effect on the Ferruginous Hawk may be as harmful as permanent impacts. The arrays will cover 6,276 acres, 5,314 acres on agricultural land and 963 acres on grassland and shrubland.¹²

The area chosen for habitat mitigation has 678 acres of *existing* sagebrush shrub-steppe subhabitat and 123 acres of disturbed land. The mitigation essentially protects 678 acres from degradation or development and affords the opportunity for 123 acres of additional revegetation to a more native land cover type, which would further increase the ecological value. Meanwhile 6,276 acres will be “temporarily” disturbed for the 30-year lifespan of Project within the footprint of the three solar arrays. While protecting existing habitat within the lease area is to be lauded, mitigation that rehabilitates large areas of disturbed or otherwise converted land back to native habitat is what would benefit Ferruginous Hawks more.

Mitigation is supposed to address the relative impact 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

¹¹ Updated ASC, Appendix L at Table 3, page 12.

¹² Updated ASC, Appendix L at Table 4, page 18.

occupied Ferruginous Hawk nests will be addressed by completing mitigation similarly within a core use area or home range on an occupied nest. Mitigation Siting Criteria 2 states that “*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.***”¹³ The selected habitat mitigation area does not appear to meet Criteria 2. A historical Ferruginous Hawk nest is located on the southern edge of the easement area, however it was **last documented as active in 1986.**

In addition, the DEIS states that the Applicant would “*avoid siting Project components within 2 miles of Ferruginous Hawk nests documented in PHS data and in Horse Heaven Wind Farm, LLC to preserve foraging habitat.*”¹⁴ The mitigation language continues however suggesting that infrastructure could still be built in the 2-mile core area. The language provides some margin in allowing components to be constructed in the core area. There is ambiguity in what nest territories would be included in the avoidance siting, whether only active nests are included or whether both active and historical nests are included. This needs to be clarified.

Despite the remaining ambiguities in the Project design and mitigation plan, it is clear that turbines would be built within the home range of Ferruginous Hawks. Turbines should be shut off within the enter home range during the breeding and rearing season to eliminate the potential for collision.

¹³ Updated ASC, Appendix L at page 23.

¹⁴ DEIS at Table 4.6-9, p 4-199.

Q What additional mitigation for impacts to the Ferruginous Hawk is necessary to address your concerns and fully mitigate impacts to that specific species?

A Alteration of native habitat near core areas and within home ranges of this species is difficult to mitigate. The following additional mitigation measures would be helpful in reducing the negative impacts to the species by the Project:

1. While protecting existing native habitat from development is a positive mitigation measure, restoring *degraded* habitat at a 2:1 ratio and thus increasing available habitat would be more beneficial.
2. Deactivating turbines within the home ranges of Ferruginous Hawks during the breeding and rearing seasons. This action would reduce the risk of collision down to near zero. True avoidance would be citing the turbines outside of the Hawk's core use area but at least this measure would help mitigate impacts.

Q What is your understanding of the Population Viability Analysis ("PVA") conducted for this Project?

A A first of its kind PVA was completed by the Applicant's consultant WEST to model the Ferruginous Hawk's projected outcomes and sensitivities to various levels of impacts from wind energy development and proposed mitigation measures in the Columbia Plateau Ecoregion in Washington state.¹⁵ The declining baseline population growth rates (λ) of 0.97 reduced the number of occupied nesting territories by 49% from 47 to 24 nesting territories over a 30-year period.

¹⁵ Jansen, E. W., and J. K. Swenson. 2022. Population Viability Analysis of Ferruginous Hawk (*Buteo regalis*) in Eastern Washington. Prepared for Horse Heaven Wind Farm, LLC, Boulder Colorado. Prepared by Western EcoSystems Technology, Inc. (WEST), Corvallis, Oregon. November 14, 2022. 20 pages + appendix.

Q What essential question is the PVA trying to answer?

A The PVA uses different scenarios to model 30-year outcomes. Variables include different levels of direct (i.e. turbine collisions) and indirect effects (i.e. loss of habitat), combined effects, and effects of adding artificial nest platforms that subsequently created new nesting territories.

Q What are additional considerations that EFSEC should be aware of when reviewing the PVA?

A 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% (average occupation rate of artificial nest platforms from 9 studies), increases of three to 10 nesting territories can positively affect Ferruginous Hawk population trends.¹⁶ Modeling may suggest that, but the problem is there are sites where nesting has occurred or attempted in the past and these nests continue to be unoccupied.¹⁷

There wasn't clear evidence that placing artificial nest platforms in areas that already have abandoned or unoccupied nests would have any positive effect. Clearly in this area, there is suitable substrate for the Ferruginous Hawk to nest on, they just aren't doing so.

¹⁶ Erik W. Jansen and Jared K. Swenson, *supra* fn 11.

¹⁷ Erik W. Jansen, *2022 Patterns of Ferruginous Hawk (Buteo regalis) Nesting in the Horse Heaven Hills, Benton County, Washington, 2017-2019, 2022*, WESTERN ECOSYSTEMS TECHNOLOGY, INC. (June 5, 2022).

The PVA correctly points out that 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.¹⁸ It is apparent that the limiting factor in Ferruginous Hawk viability in Washington state is not the availability of nesting substrate but the availability of suitable habitat to locate prey.¹⁹ The loss of effective habitat resulting from the Horse Heaven Hills project will only accelerate the species' decline in Washington state.

Q If the limiting factor for the Ferruginous Hawk's viability in the vicinity of the Project is foraging habitat, is there a need to offset turbines at all from potential nesting sites?

A There is always a concern of direct mortality from collisions with turbines. Compared to other species impacted by mortality from collisions such as Bald and Golden Eagles, only eight Ferruginous Hawks mortalities in the Columbia Plateau Ecoregion from wind turbine collisions have been confirmed by the Applicant.²⁰ However, because there are much fewer individual Ferruginous Hawks within the Columbia Basin, the impact of losing a single individual is much greater. There is evidence that Ferruginous Hawks show tolerance to wind turbines which increases their risk of colliding with turbines.²¹ Ideally therefore, turbines should be offset from nesting sites to reduce the risk of collision.

¹⁸ Erik W. Jansen and Jared K. Swenson, *supra* fn 11.

¹⁹ Erik W. Jansen and Jared K. Swenson, *supra* fn 11.

²⁰ Horse Heaven Wind Farm, LLC. 2021. Response to Data Request No.1; [Hab-11 to Hab-15] submitted to the Washington Energy Facility Site Evaluation Council in support of Horse Heaven Wind Farm Washington Energy Facility Site Evaluation Council Application for Site Certification EFSEC Docket Number: EF-210011.

²¹ James W. Watson, Ilai N. Keren, and Robert W. Davies, *Behavioral Accommodation of Nesting Hawks to Wind Turbines*, THE JOURNAL OF WILDLIFE MANAGEMENT (June 27, 2018).

Q What is the most scientifically defensible offset distance of turbine locations from sites with a high potential for nesting?

A Home range sizes and core areas of Ferruginous Hawks in Washington appear to be highly variable and are dependent on availability and abundance of suitable prey species. Unpublished data gathered from WDFW study of 17 breeding pair of Ferruginous Harks in southcentral Washington and northcentral Oregon from 2007 to 2014 using GPS telemetry, home ranges averaged 315.9 km² (Brownian Bridge 95% isopleths) and 32.3 km² (50% isopleths) for seventeen breeding pairs in southcentral Washington and northcentral Oregon from 2007 to 2014.²² The 32.3 km² calculation equates to a 2.0 mile-radius core area. The Brownian Bridge method of analyzing animal movements is more sophisticated than the traditional kernel density estimator and utilizes the abundant relocation data collected from modern GPS telemetry.

You could make a defensible argument that no turbines should be placed at all in the entire home range. But if you put turbines outside the 2.0 mile radius core area, and provide adequate mitigation for the remaining impacts, then that would be a reasonable situation or scenario for this particular project.

²² Gerald E. Hayes and James W. Watson, Periodic Status Review for the Ferruginous Hawk, Washington Department of Fish and Wildlife (August 2021).

Q What key prey species for the Ferruginous Hawk will be impacted by the Project?

A Ferruginous Hawks in the Columbia Basin of Washington primarily prey on small mammals like northern pocket gophers (*Thomomys talpoides*).²³ Ground squirrels and jackrabbits can also make up a significant portion of their diet. Townsend's ground squirrel, *Urocitellus townsendii townsendii*, has been found within 2 miles of the Project.²⁴ The species is also a state Candidate for listing. There is potential for some colonies to be within the project area since suitable habitat exists. Habitat for jackrabbits (*Lepus spp.*) also exist within the project area and it is possible that either species could occupy the portions of the project area, however both species are no longer common.

Q Have you reviewed the proposed structure and scope of the Project's Technical Advisory Committee ("TAC") that will be formed to implement the Project's minimization and mitigation measures and monitoring?

A Yes.

Q Do you have any concerns about the proposed structure and scope of the TAC?

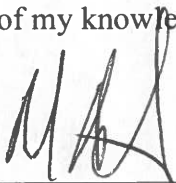
A The TAC has been proposed to provide technical advice for the Applicant related to wildlife and habitat. The TAC would also provide direction on adaptive management. Language in the DEIS uses the words "advising" and "reviewing" in its responsibilities of the TAC. For example, one responsibility would be to: "review and provide advice to

²³ Scott A. Richardson, Anne E. Potter, Karin L. Lehmkuhi, Rosemary Mazaika, Mary E. McFadzen, and Rick Estes, *Prey of Ferruginous Hawks breeding in Washington*, NORTHWESTERN NATURALIST 82:58-64 (Augumn 2021).

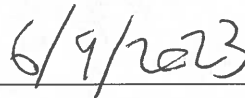
²⁴ Washington Department of Fish and Wildlife's Priority Habitats and Species data is available publicly at <https://wdfw.wa.gov/species-habitats/at-risk/phs#:~:text=The%20Priority%20Habitats%20and%20Species,use%20it%20to%20protect%20habitat> (last visited June 8, 2023).

EFSEC on the final Project design.”²⁵ Another would be to: “review and provide advice to EFSEC on pre-design and pre-construction data collection requirements to address Project mitigation measures and conditions of management plans.” These issues and other TAC responsibilities should be decided upon in the decision document and final environmental impact statement. Final Project design should be a decision made in the public process of the SEPA through the EIS, not by a TAC after the Project has been approved. Adaptive management should be part of the TAC responsibilities post-construction or during operations when for example, additional mitigation is needed if thresholds are exceeded. The DEIS is unclear as to who makes final decisions in response to TAC advisements. If EFSEC is the party that makes these determinations, it should be stated clearly. Otherwise, the TAC is simply an advisory committee and therefore not the proper venue to determine final Project design and mitigation measures.

I declare under penalty of perjury that the above testimony is true and correct to the best of my knowledge.



Mark Nuetzmann



Date

²⁵ DEIS at 4-195.