

RECORD OF DECISION FOR THE PROPOSED ISSUANCE
OF A SECTION 10(A)(1)(B) INCIDENTAL TAKE PERMIT

RECORD OF DECISION

**for
Proposed Issuance of an Endangered Species Act
Section 10(a)(1)(B) Incidental Take Permit
to
Skookumchuck Wind Energy Project, LLC
regarding implementation of the
Skookumchuck Wind Energy Habitat Conservation Plan**

U.S. Fish and Wildlife Service

RECORD OF DECISION FOR THE PROPOSED ISSUANCE
OF A SECTION 10(A)(1)(B) INCIDENTAL TAKE PERMIT

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Contents

Proposed Federal Action.....	1
Purpose and Need	1
Project Description.....	2
Plan Area.....	3
Covered Species.....	3
Covered Activities	3
Protection Measures and Conservation Strategies.....	4
Monitoring and Adaptive Management	4
Alternatives	4
Decision and Rationale	7
Conditions	7
Environmentally Preferable Alternative	8
Public Involvement	9
References.....	11
Attachment 1	12
Attachment 2	S-13

Introduction

This Record of Decision (ROD) was prepared by the U.S. Fish and Wildlife Service (Service) in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 4321 *et seq.*), as amended. The purpose of this ROD is to document the decision of the Service in response to an application submitted by Skookumchuck Wind Energy Project, LLC (Applicant) for an Incidental Take Permit (Permit or ITP) addressing species listed under the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. §1531 *et seq.*) and species protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. §668 *et seq.*) (Covered Species). The information contained in this ROD is based on the ITP application and the submission of a supporting Habitat Conservation Plan (HCP) (Chambers Group and WEST, 2019), the Final Environmental Impact Statement (FEIS) addressing this action, and other information in the administrative record. The Service decision to issue the Permit follows a determination that the Permit issuance criteria under Section 10(a)(2)(B) of the ESA and under regulation 50 C.F.R. 22.26(f) implementing BGEPA, have been met. The Permit allows for the operation of the Skookumchuck Wind Energy Project (Project) in Lewis County, Washington, to occur in compliance with the ESA and BGEPA. The Permit and its associated HCP provide protection for and promote the conservation of the Covered Species, while enabling the Applicant to conduct otherwise legal activities associated with the operation of wind turbines and other activities covered by the HCP.

This ROD presents the Service's Permit decision and the rationale supporting the decision, identifies the reasonable range of alternatives considered in the FEIS, and discusses whether all practicable means to avoid or minimize environmental harm from implementation of the selected alternative have been adopted (40 C.F.R. §1505.2).

Proposed Federal Action

The Service proposes to issue an ITP to Skookumchuck Wind Energy Project, LLC, under the authority of Section 10(a)(1)(B) of the ESA and BGEPA implementing regulations found at 50 C.F.R. §22.11, for a period of 30 years. Documents used in the preparation of this ROD include the following, all herein incorporated by reference:

- Final HCP (Chambers Group and WEST, 2019)
- Final EIS, Skookumchuck Wind Energy Project Proposed HCP (Service, 2019c)
- The Service's Biological Opinion #01EWF00-2019-F-1190 for the Skookumchuck Wind Energy Project HCP (Service, 2019a)
- Service Findings and Recommendations for the Proposed Issuance of an ESA Section 10(a)(1)(B) ITP for the Skookumchuck Wind Energy Project Proposed HCP (Service, 2019b)

Purpose and Need

The purpose of the Service's proposed action is to fulfill our legal and conservation obligations under Section 10(a)(1)(B) of the ESA and under BGEPA in response to the Applicant's HCP and Permit request addressing the Project. The need for the proposed Federal action is due to the

likelihood that otherwise lawful activities proposed by the Applicant on the Applicant's project site will result in take of the Covered Species.

The permit issued by the Service must meet all applicable ESA issuance criteria and implementation should be technically and economically feasible. See 16 U.S.C. §1539(a)(2)(B); 43 C.F.R. §46.420(b). Issuance criteria under the ESA includes, without limitation, the requirements that the Applicant will minimize and mitigate the impacts of the taking on Covered Species to the maximum extent practicable and the taking will not appreciably reduce the likelihood of survival and recovery of the Covered Species in the wild. Likewise, the permit issued by the Service must meet all applicable permit issuance criteria under BGEPA. This includes, without limitation, a finding that proposed take of eagles is compatible with the preservation of eagles, that the take be avoided and minimized to the maximum degree practicable, and that practicable compensatory mitigation is provided to offset for remaining unavoidable impacts, if required (50 C.F.R. § 22.26(f)).

Project Description

The Applicant proposes to operate and maintain the Project, consisting of 38 wind turbine generators (WTGs) and support infrastructure, with a generating capacity of approximately 137 megawatts (MW) of renewable energy to help meet the requirements of the Washington Energy Independence Act (Revised Code of Washington [RCW] 19.285). The Project facilities are mainly located on private forestlands in Lewis County, Washington, with a substation located in Thurston County. The requested Permit covers facility operations after the Commercial Operation Date, which was estimated to be July 2019, or later. Permit coverage would not apply to: siting; construction; calibration; testing; other steps occurring prior to the Commercial Operation Date, or the date on the Permit, if issued, whichever is later, or to decommissioning. At no time after the Commercial Operation Date would collisions of Covered Species with stationary structures other than wind turbines, (e.g., transmission lines and metrological towers), be covered by the permit. However, the permit would cover collisions with operational or curtailed or stationary turbines (after initiation of Commercial Operation Date, as described in the HCP).

The HCP includes a variety of measures to minimize effects on the Covered Species. One measure is a WTG-operating regime with curtailment of ten WTGs during some periods when higher passage of marbled murrelets through the Project area is expected. Eagle-detection technology designed to trigger WTG curtailment will be tested, and will be implemented in accordance with HCP proscriptions if this technology is effective at minimizing eagle mortality. Other measures to minimize the amount of take of Covered Species include: carrion removal; site management, including trash management procedures; and low vehicle speed limits.

The mitigation associated with the proposed HCP involves the purchase and maintenance of conservation lands in Pacific County, derelict fishing net removal in the Salish Sea, and power pole retrofits in priority areas in the service area of Rocky Mountain Power (RMP) in the same local area populations of the bald eagle and golden eagle as occur at the project site.

The HCP also includes monitoring for carcasses that will be used to assess actual levels of take of the Covered Species at the Skookumchuck facility. Adaptive management will be implemented if monitoring yields estimates of take of Covered Species that exceed levels authorized under the ITP.

While the HCP addresses a Bird and Bat Conservation Strategy (BBCS) for non-Covered Species, and states the Applicant’s intent to voluntarily utilize the BBCS in its conservation program, a detailed plan has not been described by the Applicant, and BBCS plan implementation is not a factor in the permit issuance decision.

Plan Area

The Permit area boundary and the corresponding area for HCP implementation cover approximately 9,697 acres, generally along a ridgeline in Lewis County (HCP, Fig 1) where the Applicant will operate 38 WTGs with 136-meter diameter (446-foot) rotors with an 82-meter (269-foot) hub height. The Plan Area also includes the areas where HCP mitigation activities will occur: (1) the conservation lands in Pacific County; (2) Salish Sea where derelict net removal will occur; and (3) the RMP or other utility-provider service area where power pole retrofits will occur.

Covered Species

The Permit would authorize incidental take of three species (Table 1). The HCP includes measures to minimize and mitigate the impacts of the taking on all Covered Species to the maximum extent practicable, and that otherwise comply with the permitting criteria of 16 U.S.C. § 1539(a) and 50 C.F.R. § 22.26(f).

Table 1: Covered Species under the Skookumchuck Wind Energy Project Habitat Conservation Plan

Common Name	Scientific Name	Status (law)	Amount of Take
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Threatened (ESA)	85 adult-equivalents
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Protected (BGEPA)	146 individuals
Golden Eagle	<i>Aquila chrysaetos</i>	Protected (BGEPA)	50 individuals

Covered Activities

The Applicant seeks take authorization for WTG operation and maintenance activities occurring within the Project site as described in the HCP, and those activities necessary to carry out all mitigation and other conservation measures identified in the HCP and/or the Permit. The Covered Activities are described in greater detail in the HCP and include activities associated with operation and maintenance of the WTGs, site management, and implementation of mitigation and other conservation measures. All covered activities will be implemented in accordance with the terms of the HCP and Permit.

Protection Measures and Conservation Strategies

The Permit is conditioned on implementation of the HCP. The Applicant developed the HCP with technical assistance from the Service. Impact avoidance and minimization measures associated with operation and maintenance of the Project are described in Section 2.3 of the FEIS and in Chapter 6 of the HCP. The duration of the proposed Permit is 30 years. The conservation strategy of the HCP is intended to offset impacts to the Covered Species through a combination of on-site and off-site measures including, without limitation, habitat protection and management, funding to implement mitigation measures, including certain measures described as high priority measures in an adopted recovery plan for the marbled murrelet (Service 1997), and for the golden and bald eagles.

Monitoring and Adaptive Management

Chapter 6 of the HCP addresses the monitoring and reporting program to be implemented as part of the proposed Permit action. Section 6.4 of the HCP addresses the adaptive management approach that will be used to evaluate and respond to potential new information within the plan area and Section 7.1 addresses the Applicant's responses to potential changed circumstances within the plan area, to thereby ensure that the conservation measures identified in the HCP are being implemented adequately and meeting the goals and objectives outlined in the HCP.

Alternatives

The Service evaluated a range of alternatives to the proposed action. Four alternatives were analyzed in the EIS, including a no-action alternative with two potential outcomes, and three action alternatives. Additional alternatives were also evaluated by the Service in the preparation of the DEIS and consideration of the HCP, but were eliminated from detailed study. The alternatives eliminated from detailed study included: (1) alternative project siting locations; (2) project operation and maintenance without incidental take coverage; and (3) emerging technologies. In consideration of comments received during public review of the DEIS, the Service evaluated whether the following alternatives would improve the analysis: (1) a combination of existing alternatives; and (2) additional monitoring elements to enhance adaptive management opportunities. Descriptions of these alternatives and why they were not considered as additional alternatives for detailed study are provided in the FEIS response to comments. The following provides brief summaries of the no-action alternative as well as the three action alternatives:

No Action

Inclusion of the No Action Alternative in the EIS is prescribed by the Federal Council on Environmental Quality regulations (40 C.F.R. §1502.14(d)). Under the No Action Alternative, the Service would not issue an ITP and therefore would not authorize take of the Covered Species that may occur incidental to the Project. The Applicant originally asserted that it intended to construct the facility prior to the Service's permit decision. However, best current information indicated that construction would occur over a 9- to 12-month period, beginning approximately in mid-2019. Therefore, the Service analyzed the following two No Action Alternatives:

No Action – Option A: No Project Operations

Option A assumes the Applicant would construct the Project, as originally planned, before the Service makes a final permit decision. Because the Applicant would not have the regulatory assurance requested to avoid potential violations of the ESA or BGEPA, the Service assumed the Applicant would not operate the Project without the Permit. Under Option A, the constructed facilities would exist but remain non-operational for the duration of the requested Permit.

No Action – Option B: No Project Construction

Option B assumes the Applicant does not obtain a Permit for operations, and therefore decides not to construct the Project. Under this scenario, nothing would change from the current conditions and no impacts would result.

Under both No Action options, the HCP would not be implemented. Furthermore, beneficial activities resulting from the HCP would not occur, including the protection and restoration of the Covered Species and their habitat, and the testing of eagle detection technology.

Alternative 1 – Habitat Conservation Plan

Under Alternative 1, the Service would issue the Permit authorizing take of the Covered Species at levels described in Section 4.7 of the FEIS as requested by the Applicant. Terms and conditions of the ITP would require the Applicant to implement the operating and conservation measures described in the Project HCP. These measures were summarized in the FEIS.

Under Alternative 1, turbine operations would be curtailed to minimize the potential for take of the Covered Species. Specifically, 10 of the WTGs would not operate for 3 hours each morning seasonally from May 1 to August 9; the HCP has termed this “baseline curtailment.” Further curtailment would also occur in conjunction with testing of eagle-detection technology to trigger turbine curtailment. Other conservation measures related to site management would be implemented under each action alternative, including without limitation, maintaining flight diverters on transmission lines, shielding and directing facility lighting downward, limiting vehicle speeds in the project area, carrion removal, and trash management. Alternative 1 requires the permanent protection and management of 620 acres of mature forest including occupied murrelet habitat, derelict net removal, and power pole retrofits. The amount of derelict net removal and power pole retrofits are greatest under Alternative 1. Combined minimization and mitigation requirements are designed to fully offset the anticipated impacts of the taking on Covered Species.

Alternative 2 – Modified Project Site Design

Under Alternative 2, the Modified Project Site Design Alternative, the Service would issue an ITP authorizing a lower level of take of Covered Species than what is requested by the Applicant. Under this alternative, the Project operational design would be modified such that the five WTGs closest to documented marbled murrelet nest locations (T34 through T38) would not

operate at all for the duration of the ITP. These five WTGs had the highest marbled murrelet detection frequencies during pre-construction surveys. Operational parameters for the balance of the Project are assumed to be implemented as described in Alternative 1. Under these conditions, Alternative 2 operations would result in a reduction of energy production to about 88% of the energy that could be generated by Alternative 1 (Table 2.3-1 of the FEIS). Take rates for Covered Species would be reduced to about 89% of the estimated take for Alternative 1 for the marbled murrelet and 87% for both the bald and golden eagle. Project operation and maintenance activities (Project O&M) related to the five WTGs would not occur, which would also represent a very slight reduction in the level of such activity required under Alternative 2 compared to Alternative 1.

Because of the lower level of take of marbled murrelet, the mitigation measures that would be implemented to offset potential take would be the same types of actions in less quantity as is described in FEIS Section 2.3.2.2 for Alternative 1. The amount of conservation land would likely remain the same because it is not functionally practical to obtain a portion of the subject land; however, the number of derelict nets removed would be fewer. With respect to bald and golden eagles, approximately 88% as many would be retrofitted to offset the lower levels of anticipated take. The monitoring and adaptive management measures would be the same as those described in Sections 2.3.3 and 2.3.4, of the FEIS, respectively.

Alternative 3 – Enhanced Curtailment

Under Alternative 3, the Enhanced Curtailment Alternative, the Service would issue an ITP authorizing a lower level of take of the Covered Species than what is requested by the Applicant. Under this alternative, Project O&M would be further curtailed to minimize the potential for take of the Covered Species. Under these conditions, Alternative 3 operations would result in a reduction of energy production to about 86% of what would occur under Alternative 1. This would result in about 58% of the estimated take for Alternative 1 for the marbled murrelet and 85% and 92% of the estimated take for Alternative 1 for bald and golden eagles, respectively. Although energy production levels would be lowest for this alternative, it is expected that O&M activities would generally be the same as for Alternative 1. The same type and level of activities would likely be required to operate and maintain all of the WTGs.

Under Alternative 3, Project operating conditions would be modified such that turbine rotation would be curtailed each year from April 1 to September 30, which represents the full marbled murrelet nesting season, to minimize the amount of anticipated incidental take. This measure extends the period during which WTG curtailment would be employed and is intended to minimize the probability of strikes during the time when marbled murrelets are most likely to be moving through the Project Area—up to several times each day during the nesting season.

Under Alternative 3, enhanced curtailment would be applied to all 38 WTGs during dawn and dusk periods, corresponding with reported periods of increased murrelet flight activity to and from inland nests during the breeding season (Hamer and Nelson 1995). The daily dawn curtailment period would begin two hours before sunrise and end two hours after sunrise, and the daily dusk curtailment period would begin two hours before sunset and end one hour after sunset.

In addition, Alternative 3 would include enhanced curtailment to avoid and minimize take of bald and golden eagles. The enhanced curtailment consists of the installation and use of automated technology that identifies eagles approaching the Project site and halts blade rotation within calculated flight paths to minimize strikes. Under this alternative, this equipment would be in place and fully functional when Project O&M begins and would continue to operate throughout the duration of the 30-year ITP.

Because of the lower level of take of marbled murrelet, the mitigation measures that would be implemented to offset potential take would be less but generally the same types as what is described in Section 2.3.2.2 of the FEIS for Alternative 1. With respect to bald and golden eagles, monitoring of take levels would inform the quantity of power poles to be retrofitted over the permit duration to offset the lower levels of anticipated take at the same ratio as would occur under Alternative 1. The monitoring and adaptive management measures would be the same as those described for the other alternatives.

Decision and Rationale

The Service's decision is to select the Proposed Action (Alternative 1), to issue an ITP that is consistent with the take minimization, mitigation, and monitoring measures described both above and in more detail in the HCP, and to include terms and conditions in the ITP that the Service deems necessary to ensure that HCP monitoring, mitigation, financial assurance, and other Applicant commitments are met. Issuance of the ITP authorizes the incidental take of the three Covered Species identified above, subject to incidental take limits and other requirements of the HCP. The term of the ITP is 30-years. The Service's No Surprises Rule (50 C.F.R. §§ 17.22 and 17.32) would apply to the Permit.

Based on the findings in the FEIS, our Biological Opinion (Service 2019), our ESA section 10 Findings and Recommendations (Service 2019b), this ROD, and other information in the administrative record, the Proposed Action is not likely to appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild, and the HCP otherwise complies with the permitting standards of 16 U.S.C § 1539(a)(2)(B) and 50 C.F.R. § 22.26(f). The Applicant's proposed HCP is approved because full implementation would meet the statutory criteria for issuance of an ITP under section 10 of the ESA and BGEPA regulations found at 50 C.F.R. 22.26(f). Implementation of the final HCP and issuance of the ITP best fulfills the Service's statutory mission and responsibilities while meeting the agency purpose and need to conserve listed species.

In implementing this decision, the Service will review and approve the final structure of the funding assurances and deed restriction instruments, to ensure the instruments are sufficient and enforceable.

Conditions

As required by section 10(a)(1)(B) of the ESA, the ITP requires implementation of the HCP to insure that the impacts of take of the Covered Species caused by Covered Activities will be minimized and mitigated to the maximum extent practicable. Likewise, the permit must meet all

applicable permit issuance criteria under BGEPA. This includes, without limitation, a finding that proposed take of eagles is compatible with the preservation of eagles, that the take be avoided and minimized to the maximum degree practicable, and that practicable compensatory mitigation is provided to offset for remaining unavoidable impacts, if required (50 C.F.R. § 22.26(f)).

Conditions for implementation of the HCP are also incorporated into the findings of the Service's Biological Opinion and ESA section 10 Findings and Recommendations for the Proposed Action. Any changes to the HCP shall be subject to the regulations in place at the time the changes are sought.

Conservation parcels will be acquired prior to project operations. In contrast, some mitigation and monitoring obligations will be paid over time. The HCP proposes two options for assuring funding for these commitments – a corporate guarantee and a letter of credit, both of which potentially meet the Service's needs. The Service will select a sufficient and enforceable option that meets Service needs prior to permit issuance. The selection of the final funding assurance instruments will be addressed through a term and condition of the permit.

The Service will include terms and conditions necessary to ensure that the deed(s) for the conservation parcels, and the associated transfer agreement are sufficient.

Environmentally Preferable Alternative

The NEPA implementing regulations at 40 C.F.R. §1505.2(b) require that the ROD identify the alternative or alternatives that is/are considered to be "environmentally preferable," i.e., the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources, as expressed in Section 101(b) of NEPA (43 C.F.R. §46.30). This is not necessarily the agency-preferred alternative, which the FEIS identifies as Alternative 1 due to that action providing the most mitigation. The Service identifies the No Action Alternative – Option B (no approval of the HCP/no issuance of the ITP/no project construction) as the environmentally preferable alternative.

Under this alternative, the Project would not be constructed or operated. Therefore, the infrastructure would not occupy the flyway of Covered Species. There would also be no operational effects associated with noise or visual impacts, and no take of listed species or non-listed species including bats and migratory birds. Through complete avoidance of new impacts associated with the proposed Project, the No Action Alternative would cause the least damage to the biological and physical environment.

The No Action Alternative would not result in the implementation of conservation measures that would benefit the Covered Species addressed in the HCP. The No Action Alternative would also produce no renewable energy, and therefore would not contribute to reductions in greenhouse gas emissions or generate economic benefits.

Public Involvement

Scoping

The Service issued a Notice of Intent on May 3, 2018, to announce preparation of the EIS and to solicit public comments on the scope of the EIS. The public scoping process and comment period were held between May 7 and June 4, 2018. Two public scoping meetings were held on May 8 and 10, 2018, and 17 comment letters were received from Federal and State agencies, non-governmental organizations, and the public during this period. The Service conducted outreach to agencies, tribes, and organizations listed in Chapter 7 of the FEIS during the development of this EIS.

Comments received during the scoping process raised several areas of concern, largely centered on the potential impacts to Covered Species. Concerns were raised that the NEPA EIS would not evaluate project siting, design, or construction, thereby limiting the opportunities to evaluate measures that might further avoid impacts of the Project on the Covered Species and other sensitive wildlife species. Concerns were also raised on the adequacy of take assessment studies, the HCP, and the avoidance, minimization, and mitigation measures on the level of take of Covered Species. Suggestions included additional curtailments of all WTGs during the marbled murrelet breeding season; relocation or elimination of five turbines near known marbled murrelet nesting sites; use of detection technology such as IdentiFlight at the start of Project O&M; and conducting further analysis from a landscape perspective to develop a regional eagle electrocution model, prior to considering power poles modifications to avoid and minimize eagle take. Additional studies were also recommended to better support the take assessments for Covered Species and to make such studies available for public review.

Draft EIS

The Draft EIS was published in the Federal Register for public review on November 30, 2018, in accordance with requirements set forth in the NEPA (42 U.S.C. §4321 et seq.) and its implementing regulations (40 C.F.R. §§1500–1508). Public comments were accepted for a 45-day period following publication of the Notice of Availability (NOA; 83 Federal Register 61664). Two public information meetings were also held during the comment period. During the comment period, comments were accepted on both the Draft EIS and the Draft HCP. Seventeen comment letters were received, including one from a Federal agency (U.S. Environmental Protection Agency), one from a State agency (Washington Department of Fish and Wildlife), one from the Applicant (Renewable Energy Systems, Ltd.), five from non-governmental organizations (the Willapa Hills and Black Hills Audubon Societies, American Bird Conservancy, Washington Forest Law Center, and the Cascade Forest Conservancy), and nine from the general public.

Comments received during the public comment period included the following:

- Suggestions to consider alternate assumptions for take modeling of the Covered Species and the population viability analysis for the marbled murrelet;
- Suggestions to consider other information and studies to inform the analysis of potential environmental impacts;
- Recommendations to evaluate a combination of existing alternatives (namely, the combination of Alternatives 2 and 3);

RECORD OF DECISION FOR THE PROPOSED ISSUANCE
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- Requests for clarification on permitting requirements and regulatory oversight for aspects of the proposed project that would not otherwise be covered by an ITP; and
- A request to extend the public comment period.

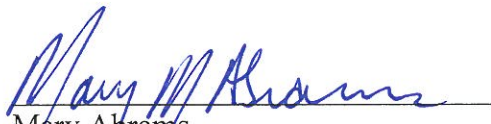
Comments received were incorporated into and resulted in some clarifications of the FEIS. Copies of all comments received, as well as the Service's responses to all substantive comments, are included in FEIS Appendix A (Attachment 2), and Attachment 1 to this ROD.

Final EIS

The FEIS was noticed in the Federal Register on May 31, 2019 (84 FR 25257) and re-noticed on June 6, 2019 (84 FR 26423) to correct a clerical error in listing the docket number in the Notice of Availability. During the 30-day wait period on the FEIS, the following two comment letters were received: One comment letter stated a position against permit issuance without providing substantive information. A second comment letter from the U.S. Environmental Protection Agency recommended a preference for a combination of FEIS alternatives 2 and 3, and described construction considerations, which were analyzed in the FEIS as a connected action.

Recommendation on Permit Issuance

Based on the foregoing findings with respect to the proposed action, I recommend approval of the issuance of Permit Number TE13242D-0 in accordance with the HCP.



Mary Abrams
Deputy Regional Director,
Pacific Region, U.S. Fish and Wildlife Service,
Portland, Oregon.



Date

References

- Chambers Group and WEST (Chambers Group, Inc. and Western Ecosystems Technology, Inc). 2018. Skookumchuck wind energy project habitat conservation plan. Prepared for Skookumchuck Wind Energy Project, LLC. September 14, 2018. 116 p.
- Chambers Group and WEST (Chambers Group, Inc. and Western Ecosystems Technology, Inc). 2019. Skookumchuck wind energy project habitat conservation plan. Prepared for Skookumchuck Wind Energy Project, LLC. April 1, 2019. 135 p.
- Hamer and Neslon. 1995. "Characteristics of Marbled Murrelet Nest Trees and Nesting Stands." In *Ecology and Conservation of the Marbled Murrelet*. Editors: C.J. Ralph, G.L. Hunt, M.G. Raphael, and J.F. Piatt. General Technical Report PSW-GTR-152. U.S. Department of Agriculture Forest Service, Pacific Southwest Research Station, Albany, California; pp. 69–82.
- Service (U.S. Fish and Wildlife Service). 1997. *Recovery Plan for the Marbled Murrelet (Washington, Oregon, and California Populations)*. Region 1, U.S. Fish & Wildlife Service, Portland, Oregon. September 24, 1997.
- Service (U.S. Fish and Wildlife Service). 2019a. Biological Opinion for the Skookumchuck Wind Energy Project, LLC. Habitat Conservation Plan. Prepared by U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office. Lacey, Washington. Document #01EWF00-2019-F-1190.
- Service (U.S. Fish and Wildlife Service). 2019b. Findings and Recommendations for Skookumchuck Wind Energy Project, LLC. Habitat Conservation Plan. Prepared by U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office. Lacey, Washington. 38 p.
- Service (U.S. Fish and Wildlife Service). 2019c. Skookumchuck Wind Energy Project Proposed Habitat Conservation Plan and Incidental Take Permit for Marbled Murrelet, Bald Eagle, and Golden Eagle Lewis and Thurston Counties, Washington; Final Environmental Impact Statement. Prepared by Anchor QEA, LLC, Portland, Oregon. Prepared for U.S. Fish and Wildlife Service, Pacific Region, Portland, Oregon. 288 p.

Attachment 1

**RESPONSES TO COMMENTS ON THE FINAL EIS
FOR THE
SKOOKUMCHUCK WIND ENERGY PROJECT, LLC HCP
LEWIS AND THURSTON COUNTIES, WASHINGTON**

PUBLIC COMMENT 1:

i am against this plan because it will kill hundreds of thousands of birds every single year. turning these 9700 acres into killing fields is disgusting. this is massive killing, not incidental killing.

According to the current literature somewhere between **140,000** and **328,000 birds** die each year from collisions with wind turbines. That's not all, explains the blog Natural Reactions: In addition, it appears that there is a greater risk of fatal collisions with taller turbine

sWind turbines kill between 214,000 and 368,000 birds annually

Now researchers at Cornell University in Ithaca, New York, have hit upon what could prove to be a simple way to protect birds from wind turbines. They've used the "signatures" of birds that are visible in raw weather radar data to generate bird maps and live migration forecasts designed to alert wind farm operators to the presence of birds at peak times.

do they have a plan in place to turn it off in peak migrating times? we cannot allow this continual killing of all wild creatures. it is massive. we kill them one way or the other. we need to find peaceful ways to get energy. geothermal is a good bet. this comment is for the public record please receipt. jean public jeanpublic1@yahoo.com

[emphasis are shown as received]

RESPONSE TO PUBLIC COMMENT 1:

The commenter addresses risks of the project without providing substantive additional information. The Service addressed the effects of the project on birds in the DEIS and FEIS. The quantitative information provided in the comment does not improve the Service's analysis of project effects. The commenter raises questions about turbine curtailment and energy alternatives, the former is addressed in the DEIS and FEIS, and the latter is outside the scope of the reasonable alternatives.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

REGIONAL
ADMINISTRATOR'S
DIVISION

JUN 28 2019

PUBLIC COMMENT 2:

Mr. Mark Ostwald
U.S. Fish and Wildlife Service
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503

Dear Mr. Ostwald:

In accordance with the National Environmental Policy Act, Section 309 of the Clean Air Act, and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency has reviewed the final environmental impact statement for the Skookumchuck Wind Energy Project (CEQ Number 20190118; EPA Project Number 18-0026-FWS).

In the Final EIS, the USFWS identifies Alternative 1, the applicant's preferred alternative, as the agency-preferred alternative. The USFWS rationale is that even though Alternative 1 would result in the highest impacts, it would result in the highest level of mitigation, although the differences in mitigation are expected to be relatively minor compared to Alternatives 2 and 3.

Preferred alternative

While the potential benefits are unknown at this time, we appreciate that the applicant is committing to developing and implementing a Bird and Bat Conservation Strategy in coordination with the USFWS prior to beginning Project operations.¹ Based on the information provided in the EIS, we find that the USFWS has presented helpful operational modifications in Alternatives 2 and 3 that, if applied, would reduce the risk, and therefore the number of, marbled murrelet and other avian collisions with wind turbine generators. We continue to recommend that an alternative combining Alternatives 2 and 3 is a viable choice to consider during decision making because the analysis of both alternatives is presented in the EIS. Combining the operational protections and the mitigation measures of the two alternatives would still provide for ample wind power generation while minimizing impacts to both covered and non-covered species in need of protection. Therefore, we continue to recommend selection of the combination of Alternatives 2 and 3.

Connected actions – disclosure of impacts

We appreciate that additional information regarding construction impacts is provided in Chapter 5 of the Final EIS. We note that the greatest potential for affecting water resources during construction would occur as the result of constructing the electrical collector system, which would cross Eleven Creek and an unnamed stream (1225988467332) and would come within 100 to 200 feet of the North Fork Newaukum River and Twelve Creek. Trenching stream crossings may be necessary and could require dewatering or redirecting the stream, depending on streamflow conditions.² For these connected actions, we recommend that the most protective methods be determined and adopted for each waterbody crossing by evaluating site-specific risk factors at each location. Open trenching may result in more than minor impacts, including but not limited to, disturbance of stream bed and banks, disruption of ground

¹ FEIS, p. A-20

² FEIS, p. 101

water-surface water interactions, increased sedimentation, changes in stream morphology, and changes in stream flow during construction. We also recommend describing the specific activities planned to restore and revegetate disturbed areas, such as, site-specific stream cross-sectional diagrams, revegetation plans, and implementation of post-restoration monitoring and assessment for each of these features.

Climate Adaptation – risk of fires

The Final EIS states that there would remain potential risks related to natural disasters such as wildfire and lightning strikes, and that there would be a slight potential for increased risk of lightning strike associated with operational wind turbine generators.³ The EPA recommends that the NEPA document include a discussion of reasonably foreseeable effects that changes in the climate may have on the proposed project and the project area, including its long-term infrastructure. This could help inform the development of measures to improve the resilience of the proposed project. If projected changes could notably exacerbate the environmental impacts of the project, the EPA recommends these impacts also be considered as part of the NEPA analysis.

We appreciate the opportunity to review the Final EIS for the Skookumchuck Wind Energy Project. If you have questions regarding our comments, please contact Elaine Somers of my staff at 206-553-2966 or at somers.elaine@epa.gov, or you may contact me at 206-553-1841 or at nogi.jill@epa.gov.

Sincerely,



Jill A. Nogi, Manager
Environmental Review and Sediment Management Unit

RESPONSE TO PUBLIC COMMENT 2:

EPA recommended treatment of a combination of FEIS Alternatives 2 and 3 as the preferred alternative because it represents greater minimization of project effects on covered and non-covered species. As described in the FEIS, the enhanced level of conservation action under Alternative 1 supports the Service's preferred alternative. The proposed adaptive management program is designed to ensure conservation effectiveness. The comment letter did not provide substantive information to revise the preferred alternative, as the comment was consistent with information described in the FEIS and leading to the designation of the preferred alternative. In addition, EPA commented on construction considerations, which are consistent with the analysis of connected actions in the FEIS. The Service expects the specific information to be most meaningful to parties addressing construction permitting, which is not part of the Services' decision. In this matter, the applicant has determined that the risk of take associated with the construction of the Project is low, and requested that the ITP only cover Project operations.

Attachment 2
RESPONSES TO COMMENTS ON THE DRAFT EIS
FOR THE SKOOKUMCHUCK WIND ENERGY
PROJECT, LLC HCP

LEWIS AND THURSTON COUNTIES, WASHINGTON

Appendix A

Response to Public Comments

1 Introduction

An NOA was published (83 Federal Register 61664) on November 30, 2018, announcing a 45-day public comment period on the Draft EIS and Draft HCP. The comment period lasted through January 14, 2019. This appendix summarizes and responds to the substantive comments received during the public comment period.

Comments were accepted through the Regulations.gov website, by email, by U.S. Postal Service, and at two public meetings held during the public comment period. The open house-style meetings were in Chehalis and Lacey, Washington, with the Service and Applicant present to answer questions about the NEPA process and the Project. Details on those meetings are included in Table A-1.

Table A-1. Draft HCP/EIS Public Meeting Details

Date	Time	Location
December 5, 2018	6:00 to 8:00 p.m.	Veterans Memorial Museum 100 SW Veterans Way Chehalis, Washington 98532
December 10, 2018	6:00 to 8:00 p.m.	South Puget Sound Community College Room 194 4220 6th Avenue SE Lacey, Washington 98503

2 Draft EIS Comment Period Summary

The Service received a total of 17 comment letters, including one from a federal agency (U.S. Environmental Protection Agency), one from a state agency (Washington Department of Fish and Wildlife), one from a business (Renewable Energy Systems, Ltd., which owns the Applicant), five from non-governmental organizations (Willapa Hills and Black Hills Audubon Societies, American Bird Conservancy, Washington Forest Law Center, and Cascade Forest Conservancy), and nine from the general public.

NEPA requires that a federal lead agency consider all comments received during the public comment period and provide a response to all comments that are considered substantive. Substantive comments are those that inform the Service on the information and analysis presented in the Draft HCP/EIS documents or that present reasonable alternatives to the proposed federal action (NPS 2015).

A copy of each comment letter with the substantive comments marked and individually identified is available for review in Attachment A of this appendix. Within Attachment A, each letter is identified by commenter type. For example, agency comments are identified by “AGY,”

organizations by “ORG,” businesses by “BUS,” and citizens by “CIT.” Each commenter type is also assigned a unique number, so that the first agency listed would be “AGY-1.” Each comment is also uniquely numbered. For example, the first comment from “AGY-1” would be “AGY-1-1.”

Substantive comments are grouped in the following themed subsections. After a summary of the comment theme, the specific comments that were summarized are listed, then a response to each comment theme follows. All comment letters were reviewed and included in the administrative record.

3 Comments and Responses

3.1 Analysis of Construction-Related Impacts

3.1.1 Comment Summary

The EIS should disclose, and the ITP should cover, construction-related take, including the effect of the road network, and clarify who is responsible for monitoring, minimizing, and mitigating potential take from construction. Issues raised include the following:

- The potential for take related to collision with non-operational turbines is not zero, and the evidence cited is not convincing.
- The potential for take related to collision with gen-tie lines, support structures, meteorological towers, and roads should be included in the ITP.
- Cited levels of collision risk for non-operational turbines and operational turbines are similar.

3.1.2 Comments

- AGY-2-4
- ORG-3-5
- ORG-4-1
- ORG-4-2
- ORG-5-2
- ORG-5-4

3.1.3 Response

A number of comments requested additional discussion about construction effects on the covered species relative to analysis of take. The coverage of the ITP, and by extension the scope of the EIS, is based on administration of Section 10(a)(1)(B) of the ESA. On April 26, 2018, the Service’s Principal Deputy Director provided a guidance memorandum on the trigger for an incidental take

permit under Section 10 (a)(1)(B) of the ESA where occupied habitat or potentially occupied habitat is being modified (Service 2018i). The guidance clarifies the following:

The HCP process is applicant driven, and that includes the threshold determination of whether to develop an HCP and apply for a permit. That threshold determination ultimately rests with the project proponent. Project proponents can take Service input into account and proceed in a number of ways, based upon their own risk assessment. They may proceed (at their own risk) as planned without a permit, modify their project and proceed without a permit, or prepare and submit a permit application. The biological, legal, and economic risk assessment regarding whether to seek a permit belongs with the private party determining how to proceed. (USDI 2018).

In this matter, the applicant has determined that the risk of take associated with the construction of the Project is low. The applicant has therefore decided to proceed at its own risk by constructing WTGs, transmission lines, meteorological towers, and other Project features without an ITP.

Nonetheless, consistent with 40 CFR 1508.25(a)(1), the EIS does analyze the potential for impacts to the human environment, including the Covered Species, from construction as a connected action in Chapter 5. As noted in Section 5.1, on-site risks associated with construction (such as exposure to increased noise and activity or harm from collisions with vehicles or equipment) are not likely to affect Covered Species. However, there is a chance for collisions with non-operational WTGs and meteorological towers. Risk of collision with other facilities such as the transmission line are also possible, but less likely. As described in the Final EIS, the likelihood of take from standing WTGs prior to operation is partly a function of the duration of that project phase. Although the Service has no information suggesting a significant delay between those phases, the analysis presented enables consideration of effects across temporal scales.

3.2 Description of Operations and Maintenance Activities

3.2.1 Comment Summary

The EIS should clarify the O&M activities to be performed for each project component, including frequency and methods (e.g., right of way maintenance timing and methods, transmission line and road maintenance activities, and activities associated with maintaining WTGs).

3.2.2 Comment

- AGY-2-12

3.2.3 Response

Information in the EIS is based on that provided by the Applicant in the HCP. Section 2.3 of the Final EIS generally describes O&M activities that are applicable to Project components, including the relative frequency of these activities. Minor revisions have been made to the Final EIS to clarify that the ITP, as requested by the Applicant, would only cover WTG O&M and site management, which includes the activities listed in Section 2.3.2.1. The methods for this work include standard industry practices plus implementation of the HCP conservation measures that include conditions for vehicle operations, trash management, and prescriptions for maintaining cleared spaces (see Section 2.3.2.1 of the EIS for more detail). Standard industry practices may include, without limitation, minimizing the frequency and duration maintenance workers are on site while still ensuring proper Project performance, using the site only for its approved land-use purposes, preventing unnecessarily elevated fire risk, implementing all management and monitoring commitments as documented, and other similar measures. In addition, O&M activities in general are further described, where applicable, under each environmental resource in Sections 4.2 through 4.15 of the EIS.

3.3 Evaluation of Alternatives

3.3.1 Comment Summary

The Final EIS/HCP should evaluate other alternatives that were not specifically considered in the Draft EIS, such as the following:

- Combining Alternatives 2 and 3
- Moving/curtailing five turbines closest to the known nesting sites or other high-detection turbines
- Considering the use of other turbines to reduce effects to birds
- Expanding curtailment to include sunset, additional turbines, a longer season, or nighttime
- Extending curtailment periods from April 15 to August 15

3.3.2 Comments

Combine Alternatives 2 and 3:

- AGY-1-2
- AGY-1-11
- AGY-2-11
- CIT-4-1
- ORG-2-1
- ORG-3-1
- ORG-3-10

Moving/curtailing the five turbines closest to the known nesting sites or other high-detection turbines:

- ORG-3-7

Considering the use of other turbines to reduce effects to birds:

- CIT-9-1

Expanding curtailment to include sunset, additional turbines, nighttime, a longer season, or construction:

- ORG-2-4
- ORG-2-8
- ORG-2-11
- ORG-3-6
- ORG-3-8
- ORG-4-6

ORG-5-1 Extending curtailment periods from April 15 to August 15:

- AGY-1-5

3.3.3 *Response*

The Service considered a reasonable range of alternatives, each of which were rigorously explored and objectively evaluated. Alternatives that inform the Service and the public about the range of potential effects were prioritized, including the measures that would minimize the effects of the taking beyond the maximum extent practicable. Alternatives outside the decision authority of the Service were deprioritized unless they could be used to avoid impacts to Covered Species; no practical measures for complete take avoidance were found within reasonable alternatives to the proposed action. Each alternative was selected to provide information specifically germane to the Service's evaluation of its Proposed Action, which is issuance, denial, or issuance with conditions of the ITP.

Alternatives 2 and 3 address a range of variations on curtailment (e.g., number of curtailed WTGs, time of day, and duration of curtailment). While some alternatives may represent additional variation, based on the analysis in the EIS, these variations are not likely to result in substantial decreases in take. For example, Alternative 3 includes curtailment at dusk, which addresses comments to consider curtailment during sunset and at night. It also includes curtailment from April 1 to September 30, which addresses comments to consider additional seasonal curtailment. Furthermore, consideration of full curtailment during all hours of the breeding season is expected to result in similar effects on murrelets as Alternative 3, because the

vast majority of exposure to turbines is during dawn or dusk flights. The best information used in Service modeling indicates that the number of daytime/nighttime flights is relatively low compared to the number of dawn or dusk flights.

A new analysis combining Alternatives 2 and 3 is not necessary because the result of that combination is disclosed in the EIS through the evaluation of the individual alternatives.

Some of the comments suggest alternatives that are not consistent with the Applicant's requested Covered Activities. For example, some comments request consideration of alternatives that address turbine and transmission line siting, construction, or equipment selection. Because these alternatives are outside the scope of the Applicant's ITP coverage request, they were not considered in detail by the Service.

3.4 Operational Risk of Collision

3.4.1 Comment Summary

The EIS should disclose and the ITP should cover the potential for take associated with other stationary features, such as the transmission line and meteorological towers. The Project will use self-supporting permanent meteorological towers, thereby minimizing avian collisions by avoiding the use of guy-lines to support the towers. This includes accounting for the potential for weather conditions such as fog or low clouds to affect murrelet flight heights and ensuring the HCP's monitoring and adaptive management programs address mortality related to overhead power lines.

3.4.2 Comments

- AGY-1-4
- AGY-2-4
- ORG-2-6
- ORG-5-3
- ORG-5-5

3.4.3 Response

As noted in the response to Comment Theme 3.1, it is the Applicant's choice to seek an ITP and define the activities that would be covered. Revisions have been made to the Final EIS to clarify that the ITP would cover operation of the WTGs and associated site management but that ITP coverage for Covered Species collision with other stationary features is not being requested and is not being provided. The Applicant has accepted the risks associated with this choice.

The proposed measures for road management and road construction, particularly the vehicle speed limits, make the potential for take of Covered Species from road system management

extremely low. Road construction would be permitted through Lewis County, which has confirmed that if road locations trigger other environmental reviews, such as water quality concerns, the relevant permitting procedures would be triggered. The commenter is also interested in the maintenance status of Project roads; because the HCP covers the operational period of a limited-lifespan facility, it is possible that roads used in implementing the permit will no longer be needed after decommissioning the Project. However, that information is not currently available. Roads used for Project operations are expected to be in use.

3.4.3.1 Marbled Murrelets

The potential for marbled murrelets to collide with other stationary features, such as the transmission line and meteorological towers, was addressed in the EIS. Risks during construction were addressed in Section 5.3.6, and risks from standing features other than the WTGs were addressed in Section 4.7 under the No Action Alternative Option A. In both cases, the risks were determined to be low for the reasons noted. This is because the marbled murrelets would usually travel through the Project Area at a height greater than the line, which is expected to be no more than 35.05 meters (115 feet), and because there is limited suitable habitat or flight corridors near the line. To further clarify that these risks would also exist under the Proposed Action, Section 4.7 of the Final EIS has been revised to include this information under Alternatives 1, 2, and 3. Commenters recommended adjusting models to address collision risk for murrelets in foggy or low-cloud conditions but did not provide additional information. The Service considered the comment and identified no specific information about the collision risks for murrelets in foggy or low-cloud conditions to better inform the quantitative modeling.

3.4.3.2 Bald and Golden Eagles

With respect to bald and golden eagles, there is not a method to quantify the risks of collision with transmission lines or the meteorological towers. However, these risks were qualitatively discussed in Section 4.7 of the EIS, under the No Action Alternative. To further clarify that these risks would also exist during Project construction and as the result of the Proposed Action, Sections 4.7 and 5.3.6 of the Final EIS have been revised to include this information.

Both bald and golden eagles have been shown to collide with stationary structures on occasion, but considering the length and number of structures, the Service believes the risk is insignificant. In addition, the take modeling associated with WTG operation was intentionally conservative and is likely to have overpredicted take. Take from stationary structures, if any occurs, is not covered and is not likely to exceed the anticipated biological effects due to the conservative nature of the Service's analysis. Therefore, take from impacts of Covered Species with these

structures is not covered but is unlikely to exceed the authorized take limits for the following described reasons:

- The model assumed that all WTGs would spin during all daylight hours every day of operation (except for those daylight hours identified for curtailment). This is conservative because WTGs are unlikely to be in motion during all of those hours every day of the year.
- The 80th quantile of the probability distribution from the Service's Bayesian collision risk model was used to predict take. As such, the Service expects there to be an 80% chance that actual take at the project is equal to or less than authorized take.

3.5 Operational Impacts from Roads

3.5.1 Comment Summary

The EIS should disclose and evaluate the operational impacts of the road system, such as public accessibility, erosion management, and the temporary or permanent status of the road system. Figures within the EIS should be updated to illustrate the proposed power line corridor and underground collection system.

3.5.2 Comments

- AGY-2-1
- AGY-2-4

3.5.3 Response

Proposed site management activities, including road and transmission line maintenance, are addressed in Section 2.3.1 of the EIS. The Project substation will normally be accessed monthly for basic visual inspection and sampling, with maintenance occurring annually. The transmission line will be inspected annually. Site roads are maintained using normal gravel road maintenance equipment once or twice per year for the life of the facility. Regular site inspections for erosion and other environmental reasons typically occur weekly. Access roads as they relate to supporting Project construction are discussed in Section 5.1.1.5, and existing roads are shown in Figure 2.1-1. As design progresses and to the extent there is a potential for impacts related to the road system or other elements of the Project, the Applicant will obtain the necessary permits or approvals, as noted in Chapter 5.

Transportation-related impacts are addressed in Section 4.12 from Project operations and Section 5.3.11 from Project construction. While access to the Project Area would occur by public roadways such as Washington Interstate 5 and State Road 507, most traffic associated with the Proposed Action would occur by existing roads on private property. Erosion management is discussed in the EIS under Sections 4.2, 4.4, and 5.3. Actions to address erosion impacts on the

road system include best management practices relevant to soil disturbance and slope stability as well as the preparation of a Temporary Erosion and Sediment Control Plan during construction.

3.6 Operational Impacts on Vegetation

3.6.1 Comment Summary

The EIS should disclose and evaluate the effects on vegetation as a result of the O&M of linear corridors such as roads, electrical towers, and the WTG line. This should include consideration of the following:

- A vegetation management plan for invasive species within the power line right-of-way and along roads
- Effects to stream shading from vegetation removal and management

3.6.2 Comments

- AGY-2-3
- AGY-2-5
- AGY-2-7

3.6.3 Response

Minimal to no vegetation removal is proposed during Project O&M. The potential impacts from Project O&M on vegetation are addressed in Section 4.5 of the EIS. This includes the potential for spread of invasive species, which was determined to be low. As further noted in Section 4.5, it is assumed that O&M activities would require that vegetation be maintained (i.e., mowed) adjacent to roadways, under power lines, in carcass search areas, and under the WTGs. These areas would have been previously disturbed, so this results in these areas being maintained as disturbed grassland habitat throughout the duration of the Project.

3.7 Operational Impacts on Wildlife

3.7.1 Comment Summary

The EIS should disclose and evaluate the effects on vegetation and wildlife as a result of the O&M of roads, electrical towers, and WTG line, including the following:

- Changes to behavior or predators (e.g., nest predation by corvids) where edge habitat is created along the right-of-way
- Fire risk data and analysis, including project-related ignition sources

3.7.2 Comments

- AGY-2-2
- AGY-2-9

3.7.3 Response

As noted in the response to Comment Theme 3.6, there is minimal potential for impacts on vegetation related to the Proposed Action. Changes to vegetation and related impacts on wildlife from construction, including the conversion of potential habitat, are generally addressed in Chapter 5 of the EIS. As noted in Section 5.3.5, the determination to allow conversion of upland areas to Project uses is under the jurisdiction of Lewis and Thurston counties and would be required to be implemented consistent with local land use standards and other applicable laws. Impacts affecting sensitive areas, particularly those that provide habitat to special-status wildlife species, may require further review and oversight by other resource agencies prior to construction.

The potential for increased risk of fire from the Proposed Action is addressed in Section 4.14 of the EIS. As noted in the EIS, operation of the WTGs could slightly increase the potential risk of fire due to short-circuiting of electrical components or the increased risk of a lightning strike to the rotating turbine. There is also potential for fire along the transmission line because of the electrical nature of the system. Project O&M is not expected to exceed the capacity of existing fire services or law enforcement; therefore, the Service anticipates minor effects of fire on vegetation related to the Project that are consistent with the types of temporary vegetation impacts that already result from stochastic fire events in the Project Area.

3.8 Operational Impacts on Water Quality

3.8.1 Comment Summary

The EIS should disclose total maximum daily loads where applicable, how the Proposed Action would prevent deterioration of water quality, and the specific discharges and pollutants likely to affect those waters.

3.8.2 Comment

- AGY-2-8

3.8.3 Response

The potential impacts on water quality from the Proposed Action were addressed in Section 4.4 of the Final EIS. As noted in that section, the potential for water quality impacts from Project O&M are low. The potential for water quality impacts from construction were addressed as a connected action in Chapter 5. As noted in Section 5.3.3, the precise location of Project elements (e.g., access roads, transmission line) are not yet determined, and it is not known whether potential impacts to any waters would occur. If it is determined that subsequent permits, including those noted in Section 5.3.3, are required, a review of water quality impacts would be pursued at that time. Any permit issued by the Washington State Department of Ecology, the U.S. Army Corps of Engineers, or the U.S. Environmental Protection Agency would meet the

standards for the applicable issuance criteria. The Applicant has assured the Service of the intent to manage the project otherwise legally with regard to all local, state, and federal laws.

3.9 Estimating Murrelet Take

3.9.1 Comment Summary

The following information should have been considered in the analysis of marbled murrelet take, and the proposed mitigation should be adjusted as needed:

- Collision avoidance rates are not based on best available science. Additional studies/assumptions are suggested.
- Nest success rate assumptions are too high, and an alternative assumption should be used.
- A more conservative reproductive rate should be used.
- The breeding season used is not consistent with Service guidance.
- Radar surveys are problematic because they were not done for the full breeding season of April 1 to September 23 (Service 2012a) versus May 11 and August 4 and they did not include the full Project Area (e.g., the northwest section of WTG line and the gen-tie line).
- Take estimation does not include fire risk data or analysis.
- Take estimation is confusing.

3.9.2 Comments

- AGY-1-3
- AGY-2-9
- ORG-1-1
- ORG-1-2
- ORG-2-5
- ORG-2-7
- ORG-2-9
- ORG-2-10
- ORG-2-12
- ORG-2-13
- ORG-3-9
- ORG-4-10
- ORG-5-6

3.9.3 Response

The terms of the ITP will specify the level of allowed take and the terms of the mitigation required to meet the issuance criteria. Section 4.7 of the Final EIS has been revised to clarify the anticipated take and requested amount of take. As noted in the Final HCP and Final EIS, should

the ITP be issued, the Applicant would be required to implement Service-approved compliance and adaptive management programs. The intent of these programs is to ensure that the Applicant meets the terms of the ITP while allowing flexibility to rely upon better information if it becomes available, not limited to improved methods of compliance monitoring or the need to adapt the implementation of agreed-upon conservation measures. For example, net removal may occur throughout the Salish Sea, in marbled murrelet Conservation Zones 1 and 2.

The Service used the best available information to support environmental analyses, including estimation of impacts on the Covered Species, and has based the analysis in the Final EIS on the best available science. To this end, the Service has reviewed the assumptions that were used in the Final EIS analysis and determined that that alternate assumptions do not change the rigor or accuracy of the analysis. The radar detection methods considered in the analysis contribute to the best available data. While each detection method for the marbled murrelet is likely to incorporate error due to the fast-flying, small-bodied bird attributes of the species, the conservation measures and effects analysis each reflect a series of conservative assumptions to ensure that any such detection errors do not result in a systematic misrepresentation of the best available exposure modeling. With regard to the breeding season for marbled murrelets, the Service acknowledges that the marbled murrelet nesting season extends beyond those dates used by the Applicant to develop their conservation measures. To account for this variation, the Service evaluated Alternatives 2 and 3, which consider alternate curtailment regimes, including implementation of curtailment during the entire nesting season.

A commenter identified additional information specific to offshore wind energy infrastructure for the Service to consider (see comment ORG-3-9). However, the Service used the best available information applicable to the terrestrial wind energy project under review.

3.10 Murrelet Population Effects – General Approach

3.10.1 Comment Summary

The analysis should consider species status and effects of the Proposed Action on metapopulations in the disclosure of potential cumulative effects. As a result of the potential cumulative risks to the species, collision risks associated with the Proposed Action are not conducive to species recovery and would exacerbate the decline of the species.

3.10.2 Comments

- AGY-1-1
- ORG-2-16
- ORG-4-7

3.10.3 Response

Cumulative effects are addressed in Chapter 6 of the Final EIS and include consideration of anthropogenic effects and effects on metapopulations. As noted in Section 6.2.2, commenters are correct that the analysis shows populations reach quasi-extirpation rates more quickly with the Proposed Action when no mitigation is implemented; however, models of the effects of mitigation show that, under an optimistic scenario, the beneficial effects will fully offset the effects of the permitted take during the 30-year permit term. Although there is uncertainty as to the likely reproductive output of the conservation lands over the 30-year permit term, given that the habitat will be protected in perpetuity, even under a more pessimistic scenario, the beneficial effects of the mitigation actions will fully offset population effects, with additional benefits to murrelet nesting habitat distribution in perpetuity.

3.11 Murrelet Population Effects – Revised Assumptions

3.11.1 Comment Summary

The PVA analysis should be revised to account for the following:

- The scale of the PVA being too coarse—it should rely on data obtained in coordination with the Washington Department of Fish and Wildlife, the Service, and DNR to better account for impacts on the local subpopulation
- The best available science, including an appropriate murrelet productivity rate and estimated age of first breeding
- Murrelet sex bias
- The possibility that murrelets in the seven occupied sites commute westward to the Pacific Ocean, including a nest-to-sea “Least Cost Path” analysis

3.11.2 Comments

- ORG-2-2
- ORG-2-10
- ORG-2-14
- ORG-4-3
- ORG-4-4
- ORG-4-5
- ORG-4-8
- ORG-4-9
- ORG-5-7

3.11.3 Response

Suggested refinements to the PVA are not expected to result in substantial changes to the modeled outcomes presented in Section 6.2.2 of the Final EIS. For example, considering the question of sex bias, it is not expected that a PVA evaluating the worst-case scenario of only affecting males would represent a measurable change to the parameters already considered. In addition, there are also uncertainties about the gender ratio of individuals on the landscape: some samples showed a male-bias population, others show the opposite, and others are balanced (Vanderkist et al. 1999; McFarlane-Tranquilla et al. 2003; Hébert and Golightly 2006). Nonetheless, based on the difference in the number of males versus females, approximately three to four more males than females would be expected to be killed per decade. This is not likely to shift the overall sex ratio in the population at large. For these reasons, the minor adjustments to the PVA that could be made to reflect different assumptions about the gender ratio of affected individuals is not expected to improve the accuracy of the Service's analysis. The Service considered factoring a nest-to-sea least-cost path and concluded that this would not improve the analysis because the PVA already addresses the possibility that the murrelets could be taken from the populations in Conservation Zones 1 or 2 and because no assumptions are made regarding the exact flight path of murrelets traveling through the Project Area.

Additionally, the use of a 2-year-old breeding age is a conservative assumption because the Applicant is mitigating for effects on adult equivalents. Therefore, selecting the youngest likely age for adulthood maximizes the beneficial effect of the HCP's mitigation measures. While the Service generally agrees that the best available information indicates some variability in the breeding age of marbled murrelets, revisions to the analysis are not appropriate because the assumption selected was conservative.

With respect to the grouping of murrelets nesting near the Project Area, it is unlikely that these murrelets constitute a true subpopulation. In terms of population genetics, murrelets form one large population from Northern California through most of Alaska, with small distinct populations in central California and the Aleutian Islands (Friesen et al. 2005; Hall et al. 2009). This indicates that dispersal and genetic mixing happens at scales larger than a local area of nesting habitat. Therefore, it may not be appropriate to apply a PVA analysis to the local grouping. Instead, any effects at the local scale are likely to be related to murrelet behavior and choice of nesting locations.

3.12 Management of Proposed Conservation Lands

3.12.1 Comment Summary

The EIS should consider the following information related to the evaluation of the impacts of the proposed conservation lands:

- The conservation lands may not provide sufficient murrelet habitat, and therefore additional locations should be considered.
- Tree age is too young in the proposed parcels.
- The assumed density of murrelet nesting is too high for the proposed area of mitigation lands; additional lands are necessary to achieve mitigation numbers.
- The proposal does not address the potential need for the Applicant to compensate for the loss of habitat that may occur from natural disasters.
- The management proposal should minimize impacts on existing murrelet habitat.

3.12.2 Comments

- AGY-1-7
- ORG-3-3
- ORG-4-12
- ORG-4-13
- ORG-4-14

3.12.3 Response

The compliance process for Section 10(a)(1)(B) of the ESA requires an HCP be developed to describe the possible effects of a proposed project and document how the Applicant will minimize and mitigate the potential for impacts to any Covered Species. This process is driven by the Applicant, who in the case of the Proposed Action has requested coverage for incidental take from WTG O&M and site management.

In consideration of the potential for take and the need for mitigation, the Service has reviewed the HCP and will document findings in the Biological Opinion, which will likely include certain conditions that the Applicant must implement in order to ensure compliance with both Section 10(a)(2)(A) of the ESA and the BGEPA implementing regulations found in 50 CFR 22.26.

With respect to the potential for loss of habitat from natural disasters, adaptive management may identify actions to respond to natural disturbance at finer scales within the conservation lands. For example, in some cases of unavoidable habitat losses on the conservation lands, it may be appropriate for the Applicant to log the affected lands and purchase additional conservation areas.

The management proposal for the conservation lands is expected to avoid adverse effects on murrelets to remain consistent with the proposed permit because adverse effects of conservation

site management are not proposed for coverage. Conservation site management is intended to benefit the structure and extent of habitat over time, as described in the Final EIS. This means any silvicultural activities would be designed to enhance stand conditions in the portions of conservation lands with less-mature forest through work conducted outside of the marbled murrelet nesting season or without generating significant noise or visual disturbance. The existing analysis accurately considered that some portions of the conservation site contain younger forest that is not currently providing platforms for murrelet nesting.

Raphael et al. 2018 describes the available information on nest success in a wide variety of conditions and concludes that at broad scales, there remains uncertainty in nest success rates of the species. The Service did consider this information and concluded the nest success information represented in McShane 2004 was applicable to the analysis of this project considering the nest success rates and supporting information by conservation zone. The Service also considered that the nest success is likely higher nearer to marine foraging areas than at the inland margin of the species' range and that the use of similar nest success values for estimating impacts and mitigation is a conservative factor for this reason.

The analysis presented in the Final EIS demonstrates that the conservation lands, in conjunction with derelict fishing net removal, provide sufficient mitigation to offset the potential take of the Covered Species that may occur as a result of the Proposed Action. As described in the Final EIS, the conservation parcels contain forest stands of various ages, including approximately 340 acres of stands that are 60 years old or older. These mature stands contain patches of remnant old trees that contain suitable platforms for marbled murrelet nesting. The average density of marbled murrelets in nesting habitat is relatively low at broad landscape scales. Research on the Olympic Peninsula estimated an average density of 370 acres of nesting habitat per marbled murrelet (Raphael et al. 2002). However, at the scale of individual patches of nesting habitat, marbled murrelets have been documented nesting within 300 feet of each other (Nelson 1997). As noted in Section 6.2.2.4 of this EIS, although there is uncertainty as to the likely reproductive output of the conservation lands over the 30-year permit term, given that the habitat will be protected in perpetuity, even under a more pessimistic scenario, the beneficial effects of the mitigation actions will fully offset population effects over a longer period of time, with additional benefits to murrelet nesting habitat distribution.

3.13 Proposed Derelict Net Removal

3.13.1 Comment Summary

The EIS should consider the following information in evaluating the potential impacts of the proposed derelict net removal program:

- The location of derelict net removal does not account for the Pacific Ocean group of murrelets.

- There should also be a monitoring and adaptive management program over this element of the mitigation.

3.13.2 Comments

- AGY-1-8
- AGY-1-9
- ORG-2-13
- ORG-3-4
- ORG-4-11

3.13.3 Response

The *Recovery Plan for the Marbled Murrelet (Washington, Oregon, and California Populations)* (Service 1997) identifies murrelet mortality in fishing nets as a threat affecting marbled murrelets in the Salish Sea, resulting in mortality of individuals. The Service's 2009 *Marbled Murrelet (Brachyramphus marmoratus) 5-Year Review* also found that murrelet mortality is documented in gillnets in Washington waters (Service 2018g). Therefore, the Service does consider net removal a meaningful way to avoid otherwise anticipated mortality. Marbled murrelets that forage in Zone 2 also forage in Zone 1 during the breeding season (Lorenz et al. 2017) and during the winter and therefore would benefit from derelict net removal in Zone 1. As a result, the Service expects the derelict net removal program will provide benefits to a relevant murrelet population.

For additional information related to the process of ensuring compliance with the ESA and BGEPA, see the response to Comment Theme 3.12.

3.14 Adequacy of Mitigation for Bald and Golden Eagles

3.14.1 Comment Summary

The EIS is not clear that the proposed HCP will be sufficient to offset take. With respect to the proposed eagle power pole retrofit program, the compensatory mitigation should be revised to be consistent with the current management of mitigating golden eagle electrocutions (Columbia Plateau model).

3.14.2 Comment

- AGY-1-10

3.14.3 Response

Section 4.7 of the Final EIS includes an analysis of the potential for take of bald and golden eagles and evaluates the effects of the Applicant's proposed eagle power pole retrofit program. In addition, Section 6.2.3.1 of the Final EIS describes the Service's *Programmatic EIS for the*

Eagle Rule Revision (Service 2016b), which embodies the most recent regulations for eagle nonpurposeful take permits and eagle nest take permits.

While some details of the compensatory mitigation plan remain to be identified, retrofitting power poles could be accomplished by the following two types of mitigation programs: 1) a permittee-responsible mitigation approach where the applicant works directly with a utility in coordination with the Service to retrofit power poles; and 2) an in-lieu fee program, which is a type of mitigation banking approach where funding is directed at the discretion of the service provider in coordination with the Service. The Applicant is proposing the first approach (permittee-driven mitigation) be used in this regard. Considering the anticipated permittee-responsible approach, the number of retrofitted poles needed would be 145 poles if 30-year retrofits are installed and 332 poles if 10-year retrofits are installed. If the in-lieu fee approach is utilized, the number of poles needed to retrofit would be 342 poles assuming a 10-year retrofit. For more details on the options for implementing the power pole retrofit mitigation plan—including information on risk assessment, power pole prioritization, and monitoring strategy—refer to Section 6.2.3 of the HCP.

Because the HCP commits to retrofitting relevant power poles commensurate with the taking and within the appropriate EMU, uncertainty about the exact location of retrofits is a detail that will be determined through surveys of existing infrastructure. Retrofitting priority (i.e., high-risk) power poles will benefit eagles. The Service has determined that the proposed compensatory mitigation is adequate to offset predicted take of golden eagles at the required ratio of 1.2 to 1 because the retrofit priorities will be reviewed and approved by the Service.

The Service confirms that the Columbia Plateau model described by the Washington State Department of Fish and Wildlife was sent to the applicant on August 22, 2018. If the available in-lieu fee program is not used, the Service will be strongly encouraging that they use this model or equivalent if the poles they select to retrofit are outside the Columbia Plateau.

3.15 Adequacy of Monitoring and Adaptive Management

3.15.1 Comment Summary

The EIS and HCP are not clear as to whether the proposed monitoring intensity and adaptive management thresholds would sufficiently inform managers about permit implementation status. For example, bird strike detection modelling and carcass recovery methods carry the risk of not detecting all affected individuals, and additional measures should be considered, including the following:

- Increased radius for carcass searches
- Adopting technology to detect blade strikes
- Using specially trained canines to detect carcasses
- Additional information on a vegetation removal plan

- Collecting and publishing data
- Additional wildlife detection systems

3.15.2 Comments

- AGY-1-6
- ORG-2-15
- ORG-3-2
- ORG-4-15
- ORG-4-16
- ORG-4-17
- ORG-4-18

3.15.3 Response

The Applicant added detail to Table 33 of the Final HCP addressing these concerns related to monitoring methods, including addressing detection efficiency. Importantly, the Final HCP reflects the Service's recommended detection probability for interpreting mortality results. Additionally, because the HCP is the Applicant's proposal, the technology incorporated into the Project design, the area to be cleared for carcass detection, and the publication of proprietary data is within the discretion of the Applicant. The Service will share with the public the results of HCP implementation as described through HCP reporting and information the Service obtains over time. The Service will make HCP annual reports available to the public, along with any additional information that the Service may obtain. Commenters expressed concern about using the adaptive management monitoring methods and the response thresholds for determinations of permit compliance. The Service is confirming here that those methods and thresholds are used in the context of the Applicant's implementation of the adaptive management program and do not prevent the Service or the public from using other methods to evaluate permit compliance.

For additional information about the compliance and adaptive management programs in general, see the response to Comment Theme 3.9.

3.16 General Approach to the Analysis of Impacts on Wildlife

3.16.1 Comment Summary

The EIS analysis of wildlife impacts should consider additional survey information and include for public review and comment a Bird and Bat Conservation Strategy based on best available science and approved by the Washington State Department of Fish and Wildlife and the Service.

3.16.2 Comments

- AGY-2-10
- ORG-2-3
- ORG-2-5
- ORG-4-19
- ORG-4-20

3.16.3 Response

As noted in Section 2.1 of the HCP, the Applicant is committing to developing and implementing a Bird and Bat Conservation Strategy in coordination with the Service prior to beginning Project operations. The Bird and Bat Conservation Strategy is a voluntary effort the Applicant committed to separate from their requested permit. As noted in the HCP, there is no comprehensive program under the Migratory Bird Treaty Act to permit take that is incidental to otherwise lawful activities.

Commenters recommended the collection of new information with regard to avian surveys in portions of the Project Area to support this analysis. While the Service would also value additional information, the Final EIS analysis reflects the best available information.

3.17 Related Permits and Approvals

3.17.1 Comment Summary

Provide additional information about required permitting and disclose how permitting requirements have been reflected in the EIS.

3.17.2 Comment

- AGY-2-6

3.17.3 Response

Connected actions—those activities that are not directly authorized by the ITP—are evaluated in Chapter 5 of the Final EIS. Chapter 5 describes the permitting or approval processes that are anticipated to apply to each connected action. For example, Chapter 5 explains that Project siting, construction, and decommissioning would require (among other permits and approvals) a substantial shoreline development permit from Lewis County and a special use permit from Thurston County.

Other local, state, and federal agencies are responsible for enforcing compliance with applicable regulations to ensure the Applicant meets required conditions prior to constructing and operating the Project. Required permits or approvals from those agencies are addressed where applicable in

the discussion of impacts by resource in Chapter 5, including updates that have been incorporated since the issuance of the Draft EIS.

3.18 EIS Process

3.18.1 Comment Summary

An extension to the comment period was requested due to limited access to resources during the government shutdown.

3.18.2 Comment

- ORG-3-11

3.18.3 Response

The public comment period was open for 23 days prior to the government shutdown and remained open for the full 45-day period while the documents were available online for public review. All comments submitted through February 25, 2019, were considered.