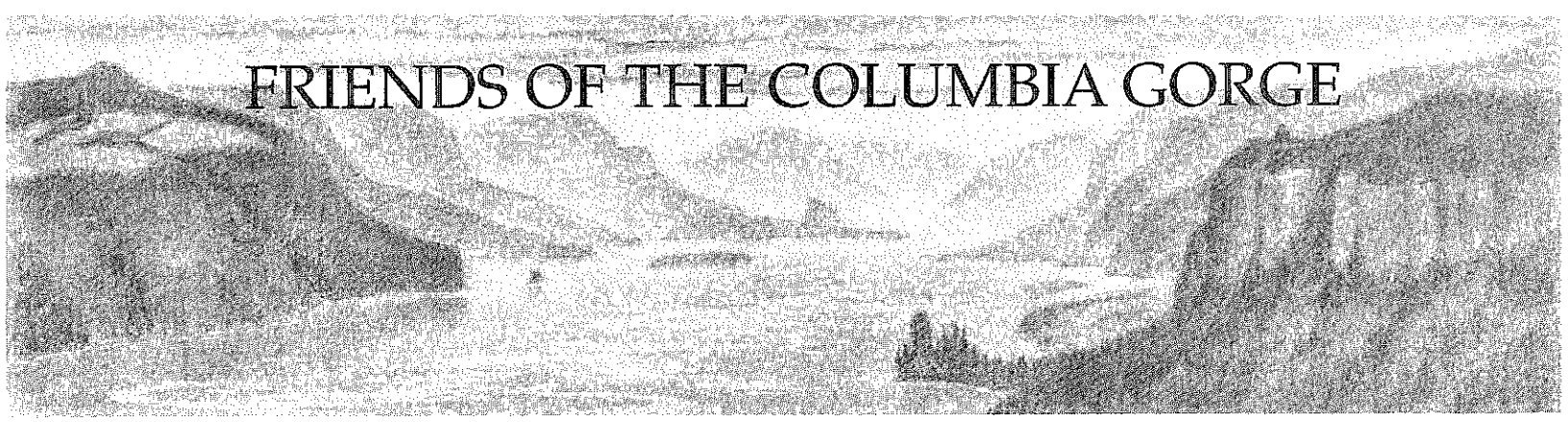

SUBMITTED VIA ELECTRONIC MAIL AND FIRST-CLASS MAIL

Rec:08/10/07
CWI-025

August 10, 2007

Bonneville Power Administration
Public Affairs Office- DKC-7
PO Box 14428
Portland, OR 97293-4428

Re: Environmental review of UPC's proposed Cascade Wind Interconnection Project.

Dear Bonneville Power Administration:

Friends of the Columbia Gorge has reviewed and would like to comment on the above-referenced proposal. Friends is a non-profit organization with members in approximately 3,000 households dedicated to protecting and enhancing the resources of the Columbia River Gorge through the effective implementation of the Columbia River Gorge National Scenic Area Act. Our membership includes hundreds of citizens who reside in the six counties within the Columbia River Gorge National Scenic Area.

The National Environmental Policy Act ("NEPA"), 42 USC § 4321 *et seq.* requires that the Bonneville Power Administration must take a "hard look" at the direct, indirect, and cumulative impacts of the proposed Cascade Wind Interconnection Project. BPA plans to tier this environmental review to BPA's Business Plan Environmental Impacts Statement (BP EIS) (June 1995) and presumably the Supplemental Analysis to the BP EIS (April 2007). The BP EIS incorporates by reference BPA's Resource Programs Environmental Impact Statement (RP EIS) (DOE/EIS-0162, February 1993).

BPA must ensure that tiered documents account for any significant new information. *See* CFR 40 § 1502.9(c)(ii). New information may include recent studies on avian and bat impacts and aesthetic impacts from wind energy development. The National Research Council of the National Academies recently published Environmental Impacts from Wind Projects (2007), which analyzes potential ecological and human impacts from wind energy development. BPA should ensure that its environmental review include consideration of this, and any other significant new information related to wind energy development generally and along the Columbia River specifically.

In addition, consideration should be given to potential impacts outlined in the attached letters from the Oregon Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife Service (USFWS). Friends emphasizes the concerns expressed by USFWS over the need for cumulative impacts analysis of wind development within the Columbia River migratory bird corridor. This analysis may also be

required to protect avian species protected under the Migratory Bird Treaty Act. BPA's position as the federal agency that owns and operates the majority of energy transmission facilities within this region suggests the need for a substantial cumulative impacts analysis of existing, proposed, and potential wind development throughout the Columbia River corridor.

Morever, NEPA prohibits the consideration of the environmental consequences of a project or series of projects in a piecemeal fashion. In the seminal NEPA segmentation case, *Thomas v. Peterson*, the Ninth Circuit held that the failure to consider several related actions in a single EIS "would permit dividing a project into multiple 'actions,' each of which individually has an insignificant environmental impact, but which collectively has a substantial impact." 753 F.2d 754, 758 (1985) (citing *Alpine Lakes Protection Society v. Schlapfer*, 518 F.2d 1089, 1090 (9th Cir. 1975)).

Numerous other NEPA cases follow the teaching of *Thomas v. Peterson* that a project may not be broken down into segments in order to avoid full environmental review at the threshold. In *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208 (9th Cir. 1998), the court held that a series of timber sales had to be evaluated together because they were all reasonably foreseeable and were sufficiently connected. *Id.* at 1215 & n.6. Significance cannot be avoided by . . . breaking [an action] down into smaller component parts." *Id.* at 1215. *See also Environmental Defense Fund v. Marsh*, 651 F.2d 983 (5th Cir. 1981) (a court may prohibit segmentation or require a comprehensive EIS for two projects, even when one is not yet proposed, if the decision-making agency has arbitrarily violated the underlying purpose of NEPA to review the environmental impacts of projects at the threshold stage); *People of Enemetak v. Laird*, 353 F. Supp. 811, 821 (D. Haw. 1973) ("almost every project can be divided into smaller parts, some of which might not have any appreciable effect on the environment.")

The proposed Cascade Wind project is one of several proposed wind energy facilities that would tie into the BPA transmission system. BPA's proposal to tier all projects to the BP EIS evidences the relatedness of the proposed developments. The relatedness of the proposed projects is also evidenced by USFWS's letter recommending cumulative impacts analysis to the Columbia River migratory bird corridor. As such BPA should evaluate all related projects together.

Also, NEPA requires that the BPA consider the effects of possible future construction that would be made possible if the proposed interconnection project is approved. *See Lange v. Brineger*, 625 F.2d 812 (9th Cir. 1980); *Swain v. Brinegar*, 542 F.2d 364 (7th Cir. 1976). (Federal Highway administration must consider the effects of possible future highway construction that will be made possible by a proposed highway project.) As such BPA must evaluate whether the Cascade Wind Interconnection project would serve other foreseeable proposals for wind energy developments in the area.

Thank you for this opportunity to comment.

Sincerely,

Richard Till
Land Use Law Clerk

Enclosures

May 30, 2007

Mr. Adam Bless
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3742

RE: Comments on the Completeness of the Application for a Site Certificate for the Cascade Wind Project

Dear Adam:

Oregon Department of Fish and Wildlife (ODFW) appreciates the opportunity to provide our comments on the completeness of the application for a site certificate for the proposed Cascade Wind Project. Our comments are as follows.

1. Please find below a listing of the most applicable statutes, administrative rules and policies administered by ODFW that would pertain to the siting of this proposed facility. ODFW will review and make recommendations for the proposed project based on the following applicable statutes and rules.

- Oregon Revised Statute (ORS) 496.012 Wildlife Policy
- ORS 496.171 through 496.192 Threatened and Endangered Wildlife Species
- ORS 498.301 through 498.346 Screening and By-pass devices for Water Diversions or Obstructions
- ORS 506.109 Food Fish Management Policy
- ORS 509.140 Placing Explosives in Waters
- ORS 509.580 through 509.910 Fish Passage; Fishways; Screening Devices; Hatcheries Near Dams

- Oregon Administrative Rules (OAR) Chapter 635, Division 043, sections 0023 through 0045 providing authority for issuance of

scientific take permits for purposes of taking wildlife for scientific study
- OAR Chapter 635, Division 100 providing authority for adoption of the state sensitive species list and the Wildlife Diversity Plan, and containing the state list of threatened and endangered wildlife and fish species
- OAR Chapter 635, Division 415 describing six habitat categories and establishing a mitigation goal for each category. The application for a site certificate must identify the appropriate habitat category for all affected areas of the proposed project and provide the basis for each category selection, subject to ODFW review. Oregon Department of Energy (ODOE) adopted this rule into OAR 345-022-0060 as an energy facility siting standard.
- OAR Chapter 635, Division 425 containing requirements for in-water blasting. In the unlikely event that the project requires in-water blasting, an in-water blasting permit would be required. An application for an in-water blasting permit must include the information necessary to meet the requirements of ORS 509.140 and OAR 635-425-000 through 635-425-0050 and be submitted to ODFW for approval. An application for an in-water blasting permit must be submitted 90 days prior to the date of blasting. An In-water Blasting Permit Application form is available on the ODFW website at: http://www.dfw.state.or.us/lands/inwater/inwater_app.pdf.

ODFW also provides technical review and recommendations on compliance with Oregon Energy Facility Siting Council rules OAR 345-021-0010(1)(p) and (q) and 345-22-040, 060 and 070.

2. ODFW is asking for the following additional information in the application for a site certificate for clarification purposes or to assure compliance with the above-mentioned statutes and rules.

Exhibit O

ODFW recommends that the applicant include in this exhibit a letter from Chenoweth Water PUD stipulating that the PUD is able to supply the anticipated 8.7 million gallons of water for project construction. The exhibit should include specific information about the Chenoweth Water PUD's water right and how much of that water right is currently being used.

Exhibit P

Pages P-3 – P-7 -- No mention is made of big game use or important big game winter range in the project area. This is important information for the application.

Page P-3, Paragraphs 4 and 5 – The end of paragraph 4 and paragraph 5 state that: some project areas have not yet been reviewed for habitat categorization and a final habitat category map will be prepared in spring of 2007; and, additional details on wildlife use will be completed by late spring 2007. ODFW recommends against finding the application complete until this additional information is made available for review and consideration.

Page P-4, Table P-1 – The table lists CRP lands as habitat category 5. In ODFW's experience on the Klondike III and the Biglow Canyon wind projects, the CRP lands were categorized as habitat category 3. ODFW would like an explanation of why the CRP lands on this project were categorized as category 5. ODFW suggests that perhaps these lands would fit into category 3. The table also lists hay fields and farm/fallow lands as category 6 and these habitats would more appropriately fit into category 5. Category 5 lands have potential for restoration whereas category 6 lands are very urbanized with roads, facilities or structures leaving the areas with little potential for habitat restoration.

Page P-4, Table P-1 – ODFW recommends that the forested habitat subtypes listed in this table all be classified as category 2 habitat. It is helpful to understand that there are habitat subtypes in the project area consisting of patches of small, medium and large trees with various mixes of Oregon white oak, ponderosa pine and Douglas fir. However, ODFW considers all of these oak and oak-pine woodland areas to be category 2 habitat due to its limited amounts and its high value for an assemblage of species in the East Cascades Ecoregion and the western part of the Columbia Plateau Ecoregion. ODFW refers the applicant to pages 172 through 183 of *The Oregon Conservation Strategy* for more information on the value of oak woodlands in the project vicinity. This document can be found on ODFW's website at: http://www.dfw.state.or.us/conservationstrategy/. The applicant may find the discussions in this document on conservation actions and conservation opportunity areas (COAs), particularly COA EC-02 *Wasco Oaks* (pages 179 – 183), helpful in development of the habitat mitigation plan for the project.

Page P-12, Table P-3a – There is no mention in this table of big game surveys conducted in the project area or any mention whatsoever of the deer collaring project that UPC has cooperated with ODFW on. Discussions between ODFW and UPC on the importance of big game winter range and the concerns with big game issues have been conducted since September 2002. In September 2003, UPC agreed to cooperate on a deer telemetry project with ODFW on the winter deer that occupy the project area and adjoining areas. UPC purchased 15 radio telemetry collars, purchased material to build traps, hired a person to check traps, and paid for a helicopter crew to capture deer in March 2005. The purpose of the deer collaring project was to determine if the activities of the wind power project changed the use patterns of the wintering big game animals in the project

area. The collars were to be out on the deer a year before construction activities, the year during construction and the year after construction. The monitoring of the collared deer on their winter range was supposed to have been conducted by UPC. In March 2005, twenty eight collars were active. Currently, only 11 collars are active. ODFW has monitored the collared deer since the collars were put on the deer. After the time and money that UPC has spent with the collaring, ODFW is surprised that there is no mention of this in the application. ODFW believes the results of this study are important factors for this project and that this information regarding big game use of the project area and big game habitat impacts needs to be addressed in the application. See the enclosed memorandum from Keith Kohl further detailing the deer collaring project.

As a general comment, ODFW expected to see in the application at least draft versions of a habitat mitigation plan and a wildlife monitoring and mitigation plan. Until versions of these various documents are available for review and comment, ODFW recommends against finding the application complete. These are the documents that would address such things as: mitigating for the various habitats that are permanently impacted, and mitigating for unexpectedly high levels of bird and bat fatalities. These are important components of understanding how the applicant will minimize and mitigate for impacts to fish, wildlife and their habitat.

Page P-30, Table P-5b – This table has no mention of impacts to deer, elk or Washington ground squirrels. If there are no Washington ground squirrels in the project vicinity, the application should state that.

Page P-32, Table P-5c and P-5d – These fatality tables are for projects in open habitats. What about rates for wooded environments?

Page P-35 -- Table P-5e is not necessarily relevant to this project since the habitats on the projects listed in the table are so different than this proposed project's habitats.

Page P-39, Lewis' Woodpecker -- The reference here to fatalities at other projects in dissimilar habitats is not relevant to what the fatalities might be for Lewis' woodpecker from this project due to the different habitat types.

Page P-42, Section P.5.2.3, Big Game and Carnivores – This section fails to address winter range or the deer collaring project. The reference to a pronghorn use study doesn't fit for this site. For completeness, the application needs data on deer and elk use, big game habitat that will be affected, and possible big game displacement impacts from the project.

Page P-45, 1st bullet, Supplemental Surveys – These surveys are still needed to add to the completeness of the application. The text states that raptor nest

surveys within 0.50 miles of facilities will be conducted. These surveys should be done out to 2 miles from project facilities, as has been done on other wind projects.

Page P-45, 3rd bullet, Flagging – The text states that raptor and pileated woodpecker nests will be flagged for nest avoidance? There needs to be more discussion in the application, and preferably after discussion with ODFW and ODOE staff, on avoidance of nests and construction activities during nesting.

Page P-46, 4th bullet, Wildlife Mitigation -- A draft list of studies has been prepared? What about the deer collaring project that was started but never completed up to this point? See our comments about this study above. Also, again, ODFW recommends that a draft habitat mitigation plan and a draft wildlife mitigation and monitoring plan be presented for review and comment prior to the application being found complete. These are key parts of the project proposal.

Page P-47, Section P.8 -- Bird and bat fatality monitoring is not spelled out in this section. ODFW recommends that the deer collaring project be continued through construction and post-construction as a part of the wildlife mitigation and monitoring plan. Also, because this proposed project is situated in oak forest habitats (for which there is no precedence in Oregon for estimating wildlife collisions), details for conducting mortality monitoring in this habitat needs to be described in the plan. ODFW recommends that the application not be found complete until a draft of the wildlife mitigation and monitoring plan is available for review and comment.

Appendix P-1, Page 1, 3rd paragraph mentions the 2003 Dan Albano coordination with ODFW on a bird study but fails to mention the deer collaring project that ODFW told Albano to conduct.

Appendix P-4, Draft Revegetation Plan, Section III Revegetation Methods, subsection 1.(b) Drilling Methods – The text states that drilling of seed would occur at 70% of the recommended application rate. Why seed at only 70% of recommended rate? Why not 100%? ODFW has the same question for subsection 3.(b) regarding drilling at 70% of the recommended application rate.

ODFW understands that the Revegetation Plan is for temporarily disturbed areas. The application should also include a draft plan for habitat mitigation proposed for permanently impacted areas, as well as a draft wildlife mitigation and monitoring plan before the application is deemed complete.

ODFW requests that the applicant provide in the application additional information on density of passerine birds and bat species nesting and foraging in the oak woodland habitats in the project area. This information will be necessary

to determine any displacement effects from operation of the turbines. The application only provides a species list. ODFW highly recommends that a wildlife displacement study for birds and big game be conducted for this project given the quality of habitats in the project area.

ODFW recommends that turbines be sited no closer than a quarter mile from permanent or seasonal wetlands in the oak woodland forested habitats. These woodland habitats combined with permanent or seasonal wetlands attract greater avian and bat species which, in turn, increases the risk of potential strikes with the turbines. Information does not exist on potential wildlife collisions in this habitat configuration and these habitats are sensitive wildlife areas that should be avoided to the extent possible.

The application needs additional information on bat use of the project area. Which species are resident breeders and which are migratory? Which species of bat may fly through or forage in the turbine rotor swept area?

In order for the applicant to draft a habitat mitigation plan, the application will first need to include a table estimating the impacted habitat categories by acres. This information could then be used to calculate the amount of mitigation acreage that will be needed to offset the acreage amounts for the five impacted habitat categories. For example, ODFW looked for in the application, but could not find an estimation of the number of trees or acres of oak habitat to be removed for the power line connecting the southern section with the middle section.

Thank you for the opportunity to provide our comments on the completeness of the Cascade Wind Project's application for a site certificate. If you have any questions regarding these comments, please feel free to call me at (503) 947-6085.

Sincerely,

Rose Owens
Habitat Special Projects Coordinator

Enclosure

cc: Keith Kohl, The Dalles
Chris Carey, Bend

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Bend Field Office
20310 Empire Ave, Ste A-100
Bend, Oregon 97701
(541) 383-7146 FAX: (541) 383-7638

Reply To: 6320.0005 (07)
File Name: Wind Cascade Wind App Cmts.doc
Tracking Number: 07-1417
TAILS: 13420-2007-FA-0132

June 1, 2007

Mr. Adam Bless
Energy Facility Siting Coordinator
Oregon Department of Energy
625 Marion St. NE
Salem, OR 97301-3737

Subject: Application for a Site Certificate for the Cascade Wind Project, Wasco County, Oregon

Dear Mr. Bless:

The U.S. Fish and Wildlife Service (Service) has reviewed the Cascade Wind Project (facility) application for a site certificate for a proposed 60 megawatt (MW) wind generation facility. The applicant's (UPC Oregon Wind, LLC) proposed facility includes 40 General Electric (GE) 1.5sle turbines with 253-foot rotor diameters on 263-foot towers. The turbines will be sited along ridgetops in three groupings, referred to as the north, central, and south arrays. The proposal includes: 1) approximately 9.64 miles of new roads and turnaround sites; 2) 4.56 miles of existing roads to be upgraded; 3) two permanent meteorological towers; 4) a system of 34.5 kilovolt electrical collection lines, both underground and overhead; 5) an electrical substation; and 6) an operations and maintenance facility with a shop, control room and maintenance area.

The Service has legal mandate and trust responsibility to maintain healthy, migratory bird populations for the benefit of the American public. We work collaboratively with our partners under conventions, treaties, laws and voluntary programs to ensure the conservation of more than 800 species of migratory birds and their habitats. We appreciate the opportunity to provide comments, and we look forward to working with you on this important project.

The Service's primary concerns are: 1) cumulative impacts of wind energy projects to migratory birds and bat resources within the Columbia River corridor; 2) the potential for project specific mortality to birds and bats based on the project location adjacent to and within oak woodland, and near two ponds and associated wetlands; 3) adequate mitigation measures to offset unavoidable project impacts to biological resources; and 4) the need for a formal standardized monitoring plan.

Migratory Bird Conservation

The Service's "A Blueprint for the Future of Migratory Birds" and the "North American Landbird Conservation Plan" identify the challenges of conservation of migratory birds. These challenges include habitat loss, degradation, and fragmentation, and dispersed mortality factors, not directly related to habitat loss, that accompany the growth of human populations and the advance of technology. Wind energy development, power lines, communication towers, among others, cause ever increasing direct mortality. Collectively, these factors contribute to population declines and with anticipated future losses in habitat, pose a growing threat to birds and bats. Implementation of on-the-ground bird conservation strategies at Federal, State, local and project level will be necessary to address the steady increase in avian mortality factors, and population declines.

Most Oregon songbirds, wading birds, waterfowl and birds of prey are protected under either the Migratory Bird Treaty Act (MBTA) or the Bald and Golden Eagle Protection Act (BGEPA). The MBTA prohibits the taking of migratory birds except when specifically authorized by the Department of Interior (16 U.S.C. 703-712). The BGEPA prohibits the taking of bald eagles and golden eagles except when specifically authorized by the Department of Interior (16 U.S.C. 668-668d). While the MBTA and BGEPA have no provisions for allowing an unauthorized take, it is recognized that some birds may be injured or killed at wind turbines and power transmission features even if all reasonable measures to avoid injury and death are implemented. The Service's Office of Law Enforcement carries out its mission to protect birds under these Acts not only through investigations and enforcement, but also through fostering relationships with individuals and industries that seek to work proactively to mitigate the negative impacts of wind energy projects on protected birds. While it is not possible to absolve individuals, companies, or agencies from liability when they commit, assist, or authorize violations of Federal wildlife laws, the Service's Office of Law Enforcement and U.S. Department of Justice have previously exercised enforcement and prosecutorial discretion with entities that have made good-faith efforts to avoid the take (killing or injuring) of protected birds. We recommend discussions continue between the Service, ODFW, ODOE, and UPC Oregon Wind LLC, to ensure wind energy projects minimize and/or avoid construction and operational effects on protected birds. We further believe, due to the considerable uncertainty regarding the potential fatality rate of bats from wind turbine strikes, that provisions for protection of bat populations also be discussed.

The Service recognizes the local efforts by wind energy developers to minimize the risk to birds and bats from disturbance, habitat loss, and collisions with turbines and power lines. However, as wind energy development continues to expand and concentrate in wind rich areas such as the Columbia River corridor, a strategic approach to assess and offset direct and cumulative impacts to birds and bats should be incorporated into all proposed facilities to establish a consistent

approach to further minimize the take of migratory birds, and to offset the direct mortality to bats.

Cumulative Impacts
We recommend that an expanded environmental impact analysis include a cumulative effects analysis that incorporates all the bird and bat survey data conducted for existing, planned and reasonably foreseeable future wind power projects in the same vicinity including projects in Klickitat County to the north and Sherman County to the east. The rapid escalation of wind power projects east of the Cascades along the Columbia River has raised concern that the environmental impacts analysis for bird and bat resources may not adequately describe cumulative effects of planned wind power projects in the same vicinity. For example, based on information within the Klondike III/Biglow Canyon wind power project DEIS, a total of 3,134 MW of electricity or approximately 1,740 turbines (assuming an average of 1.8 MW/turbine) are reasonably foreseeable future wind power projects in the vicinity. Using the mortality rate per turbine provided in similar areas, 42 raptors, 1,740 – 3,480 passerines, and 2,610 – 4,350 bat fatalities would be expected each year for the existing, planned and reasonably foreseeable wind projects including the Klondike III/Biglow Canyon projects. Although mortality rates appear to be significant, the population effects to individual species from turbine mortality can be difficult to discern. The number, location, and type of turbine; the number and type of species in an area; species behavior; topography; and weather all affect turbine mortality rates and potential adverse impacts to regional populations of raptors and bats along the Columbia River corridor.

Project location within Oak Woodlands
Approximately one-half of the proposed turbines in this proposed facility pass through or are immediately adjacent to oak woodland habitats. In Oregon, Oregon white oak (*Quercus garryana*) woodlands provide unique habitat for many plant and animal species, but these habitats are rapidly disappearing due to increased urban and agricultural land use and the encroachment of conifers in oak stands. The Oregon Conservation Strategy (2005) identified a Conservation Opportunity Area (i.e., EC-02. Wasco Oaks) which encompasses the majority of the proposed facility project area. Recommended conservation actions have been identified for the Wasco Oaks area to address altered fire regimes, land use conversion and urbanization, and habitat fragmentation.

In the East Cascades, oak woodlands are relatively rare and occur primarily on the north end of the ecoregion. They are located at the transition between ponderosa pine or mixed conifers forests in the mountains, and the shrublands or grasslands to the east. Valuable habitat features of Oregon white oak include its dead branches and cavities, which provide safe places for bird and bat species to rest and raise young, and the production of acorns that are eaten by a variety of wildlife and are particularly important in the winter, when other foods are scarce.

Since no other newer generation wind projects have been developed in comparable oak woodlands avian/turbine interaction data is unavailable. Based on the unique features of oak woodland, the limited amount of this habitat type within the East Cascades Ecoregion, high wildlife value, and the considerable uncertainty of local fatality rates from the facility for bird and bat species known to occupy oak woodland, the Service recommends that wind power development proceed cautiously in oak woodland, and seek to avoid and minimize impacts

through project design (e.g., using turbines with greater generating capacity (greater than 2.0 MW) in order to reduce the total number of turbines), or consideration of an alternate site.

Recommendations for Mitigation and Monitoring
Since considerable uncertainty exists regarding the potential population level impacts to particular bird and bat species, the Service recommends that the proposed facility include the following recommendations to avoid, minimize, mitigate and monitor project impacts on avian and bats species.

- To mitigate direct and cumulative impact to birds and bats, consider an option to establish a wind energy mitigation fund or fee system to address direct and cumulative effects by protecting and improving habitats in the region. These mitigation funds could be leveraged or combined with other grant programs (e.g., Oregon Watershed Enhancement Board) to offset bird and bat mortalities over the lifespan of the wind energy development.

- Establish a 0.25 mile setback for three turbine locations (1, 11, and 12) from two open water ponds and associated wetlands within the project area. Because ponds serve as a consistently dependable food resource, concentrated foraging and roosting by bird and bat species are expected to occur increasing the fatality rate of nearby turbines. These ponds were identified as an attractant to bird and bat species in the Ecological Baseline Study completed for the project.

- Consider the use of turbines that would have a peak generating capacity greater than 2.0 MW, in order to reduce the total number of turbine within the project area. For example, the proposed facility would need 15 fewer turbines if 2.4 MW turbines were used. This action could significantly reduce bird and bat fatalities within the project area.

- Post-construction mitigation measures should include habitat restoration or preservation of oak woodland habitats. Possible approaches include: 1) Maintain a diversity of tree size and age across the stand, in particular large oak and ponderosa pine trees; 2) remove conifers or small oaks that are competing with larger oaks; 3) maintain snags and create snags from competing conifers to provide cavity habitat; and 4) encourage oak reproduction through planting or protective exclosures (Oregon Conservation Strategy (2005)). Restoration efforts should be developed and implemented in coordination with local and regional experts, and State and Federal agencies.

- For the Pacific Northwest region, the hoary bat (*Lasiurus cinereus*) and silver-haired bat (*Lasionycteris noctivagans*) appear to be at the greatest risk from collision with wind turbines. Overall populations of bats in the region are not well documented. Bat surveys should be completed to determine from a regional perspective the potential risk to these local populations. Surveys should also be completed to determine bat migratory patterns, patterns of local movements through the area, and the response of bats to turbines, individually and collectively.

- Proposed mitigation measures should include a formal monitoring plan and agreement to ensure that mitigation measures are completed and that habitat restoration and revegetation are effective.

- Monitoring standards and guidelines should be developed and implemented in coordination with local and regional experts, and State and Federal agencies. Statistical comparisons of bird mortality are the most common measure of data collected at these facilities. The unknown impact of new generation turbines on bird and bat mortalities increases the urgency to initiate long-term monitoring. Much of the discrepancy in bird collision data comes from two causes; a lack of comparable methodology between studies, and trying to compare disparately situated sites (Tingley 2003). Once estimates, methods, and metrics are comparable, they can be used to share site, design, and management information with other facilities to reduce harm to wildlife and their habitats.

- Monitor raptor-safe configurations in high risk areas and low risk areas. Periodically inspect to identify areas of concern and report on the installation, efficacy of design, and degradation in the field of whatever bird protection devices are employed (according to published literature on avian power line electrocution, field observations indicate a significant number of bird protection devices are incompletely or improperly installed and may degrade in the field).

- A 34.5-kilovolt overhead collection line has been proposed to link the central array with the south array that crosses, and then parallels Chenoweth Creek for approximately 0.5 miles. We recommend the overhead collection line span Chenoweth Creek and maintain a 200 foot minimum buffer to minimize construction and maintenance impacts on sediment, shade, and large wood recruitment.

- The decommissioning process of the proposed project should be addressed. The expected life span of the project and decommissioning process should be included in the analysis of impacts of the facility.

The Service appreciates the opportunity to provide comment on the proposed facility. We would like to work with you to further protect fish and wildlife resources within the project area. If you have any questions regarding the Service's comments, please contact Jerry Cordova or me at the Bend Fish and Wildlife Office at 541-383-7146.

Sincerely,

Nancy Gilbert

Nancy Gilbert
Field Supervisor

cc:
Mike Green, USFWS Region 1, Portland, OR.
Estyn Mead, USFWS Region 1, Portland, OR.
Doug Young, USFWS OFWO, Portland, OR.
Chris Carey, ODFW, Bend, OR
Keith Kohl, ODFW, The Dalles, OR
Rose Owens, ODFW, Salem, OR

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