



United States Department of the Interior



FISH AND WILDLIFE SERVICE

La Grande Field Office

3502 Highway 30

La Grande, Oregon 97850

Phone: (541) 962-8584 FAX: (541) 962-8581

Reply To: 6320.0008(11)
TAILS: 13420-2011-CPA-0032

FEB 14 2011

Sue Oliver
Energy Facility Siting Officer
Oregon Department of Energy
245 Main Street, Suite C
Hermiston, OR 97838

Subject: Comments on the Antelope Ridge Wind Project Final Application for an Energy Facility Site Certificate (13420-2011-CPA-0032)

Dear Ms. Oliver:

This document transmits the Fish and Wildlife Service's (Service) comments on the Antelope Ridge Wind Project's (Project) Final Application for an Energy Site Certificate (Final ASC). We appreciate the ongoing opportunity to provide comments on this Project.

The Service has formally provided comments on the Project during each previous phase of Oregon Department of Energy's (ODOE) facility siting process, to both ODOE and Horizon Wind Energy (Horizon). We identified a number of Project siting and habitat/species impact concerns, and monitoring, evaluation, and other conservation actions needed that would result in a well-sited wind project. The Service has also met multiple times with Horizon to discuss our concerns with the proposed Project, to initiate efforts to better study and understand golden eagle use of the Project area, as well as initiate development of a golden eagle conservation plan for the Project. However, even after these meetings with Horizon and reviewing the Project's Final ASC, the Service continues to have concerns associated with the proposed Project. These concerns are identified below. To further assist ODOE in writing the draft Proposed Order, we are providing a list of previous Service comments and how Horizon responded in the Final ASC to those comments and recommendations (Attachment 1).

The Service supports properly sited renewable energy and the economic benefits that wind energy generation brings to local communities. We also recognize wind power development has the potential to impact wildlife and habitat resources. The Service has a legal mandate and trust responsibility to maintain healthy, migratory bird populations for the benefit of the American public. The Service also has authorities and/or an interest associated with non-migratory bird species, and other wildlife species and their habitats, and seeks to collaboratively conserve these species and habitats. Pursuant to the Service's trust resources, the Migratory Bird Treaty Act; the Endangered Species Act; and the Bald and Golden Eagle Protection Act, the Service is providing the following comments.



Permits Applicable to Construction or Operation of the Project

Golden eagles, along with bald eagles, are protected under the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended (16 U.S.C. 668-668d). BGEPA is the primary law protecting eagles from “take”, where take is defined as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, disturb individuals, their nests and eggs (16 USC 668c). “Disturb” was defined by regulation at 50 CFR 22.3 in 2007 as “to agitate or bother a Bald or Golden eagle to a degree that causes...injury to an eagle, a decrease in productivity, or nest abandonment...” (USFWS 2007).

In 2009, important new permit rules were created for eagles. The new rule most pertinent to this Project review is 50 CFR 22.26, wherein the Service can issue permits that authorize limited take of Bald and Golden eagles when the take is associated with, but not the purpose of an otherwise lawful activity, and cannot practicably be avoided. Further, the regulation also authorizes ongoing or programmatic take, but requires that any authorized programmatic take is unavoidable after implementing advanced conservation practices.

BGEPA provides the Secretary of the Interior with the authority to issue eagle take permits only when the take is compatible with the preservation of each species, defined in USFWS (2009a) as “...consistent with the goal of increasing or stable breeding populations.” The Service ensures that any take it authorizes under 50 CFR 22.26 does not exceed this preservation standard by setting regional take thresholds for each species determined using the methodology contained in the National Environmental Policy Act (NEPA) Final Environmental Assessment (FEA) developed for the new permit rules (USFWS 2009b). The FEA (page 46840) identified a take threshold of 0 golden eagles annually for the region encompassing the Project. While the take threshold in the Project area is 0, in certain circumstances programmatic take permits can be issued. Programmatic take permits therefore will authorize limited, incidental mortality and disturbance of eagles, provided effective off-setting conservation measures that meet regulatory requirements are carried out.

On February 8, 2011, the Service announced availability of Draft Eagle Conservation Plan Guidance (draft Guidance) applicable to the issuance of a programmatic eagle take permit by the Service (USFWS 2011). Although it is not final guidance, it does describe actions which, when implemented, help comply with the regulatory requirements in the BGEPA for an eagle take permit. The draft Guidance provides background and information necessary for wind-facility project proponents to prepare an Eagle Conservation Plan (ECP) that assesses the risk of a prospective or operating project to eagles, and how siting, design, and operational modifications can mitigate that risk. The final ECP must reduce predicted eagle take, and the population-level effect of that take, to a degree compatible with regulatory standards to justify issuance of a programmatic take permit by the Service.

A key component in development of an ECP is the categorization of a project site’s (or alternative configuration and operation of the site) risk and the likelihood that the site (or alternative configuration and operation of the site) will meet standards in 50 CFR 22.26 for issuance of a programmatic eagle take permit. A “Category 1 – high risk” site is defined in the Guidance as “high risk to eagles, potential to avoid or mitigate impacts is low”. The draft

Guidance states that projects in “Category 1 – high risk” should be moved, significantly redesigned, or abandoned because the project would likely not meet the regulatory requirements for programmatic eagle take permit issuance. The Service’s preliminary determination is that the Project would be categorized as a “Category 1 – high risk” location, as discussed below.

Service Comments and Significant Concerns

The proposed Project is located in an area that includes a diverse topography of primarily native sagebrush steppe with intermixed conifer forest. This area is considered big game critical habitat for both deer and elk and big game winter range, as well as important habitat for many native species such as sage-grouse, migratory birds, raptors (including golden eagles), and bats. Due to the high natural resource and wildlife value of the Project’s location, the Service has numerous concerns associated with the Project. Most of these comments have been provided through previous phases of the facility siting process; however, after reviewing the Final ASC, the Service continues to have many of the same concerns.

Golden Eagles

Wind projects that overlap important eagle-use areas may pose risks to the eagles in a variety of ways. First, structures such as wind turbines can cause direct mortality through collision (Hunt 2002, Krone 2003, Chamberlain *et al.* 2006). Second, activities associated with pre-construction, construction, operation, or maintenance of a facility can cause disturbance and result in loss of productivity at nearby nests or disturbance to nearby concentrations of eagles. Third, if disturbance or mortality effects are permanent, they can result in the permanent or long-term loss of a nesting territory. All of these impacts, unless properly permitted, are violations of BGEPA (USFWS 2009a). Additionally, disturbances near areas that are important for roosting or foraging might stress eagles to a degree that leads to reproductive failure or mortality elsewhere; these impacts are of concern as well as they would likely amount to prohibited take.

The Project’s proposed turbine corridors and individual turbine locations are in areas that pose considerable risk of injury and mortality to golden eagles. In addition, the Project area’s golden eagle habitat is similar to the adjacent Elkhorn Valley wind project’s golden eagle habitat; however, the proposed locations of Project turbine corridors are closer to active golden eagle nests than at the adjacent wind project. Given the golden eagle mortalities already caused by operation of that smaller wind project, the proposed Project turbine locations indicate more risk to golden eagles from the Project’s operations than at the adjacent wind project. We consider the likelihood of golden eagle take to be high, in the form of mortality and disturbance, and with possible resultant loss of one or more eagle territories over the Project’s life.

The Project’s pre-construction baseline studies quantified the use by, and importance of, the Project area for golden eagles. For example, five golden eagle nests were located within two miles of the Project area and a total of 107 observations of golden eagles were documented during the baseline surveys (32 observations during sensitive species surveys and 75 observations during other surveys or incidentally) (Application Exhibit P, page P-27 and page P-30). The number of golden eagle observations were second only to the number of grasshopper sparrow observations (Application Exhibit P, page P-28), suggesting a relatively high use of the

Project area by golden eagles. Additionally, golden eagles were observed to fly within the rotor swept height (RSH) in 86.1 percent of the total observations (Application Attachment P-7, page 13). This suggests the golden eagles that use the Project area fly within the same spatial area where turbine blades spin the majority of the time.

The Project's baseline studies also identified golden eagle high use areas and a possible golden eagle flyway. "With the possible exception of golden eagles, no obvious flyways were observed. To some extent, golden eagle flight paths tended to show affinity toward steep ridgeline slopes (for example near stations J, I and M)." (Application Attachment P-7, page 22). In addition, the flight paths of golden eagles observed in the Project area show use beyond the proposed 50 m setback from the edge of Craig Mountain (Application Attachment P-7, page 116, Figure 8f). Given this use beyond the proposed setback, the majority of the golden eagles observed flew within the RSH, and use of steep ridgeline slopes within the Project, the Service is concerned that the proposed Project poses a very high risk of injury or mortality to golden eagles.

In fact, based on the Project's baseline survey data, the annual fatality estimates were calculated to be 0.04 raptor fatalities/MW/yr or 12 raptor fatalities for the Project. However, using the 90% prediction interval, the raptor fatalities could be as high as 0.31 fatalities/MW/yr (up to 93 raptor fatalities) for the Project, (Application Attachment P-7, page 23). Based on relative abundance and the high exposure index, there is a higher potential for golden eagle (and red-tailed hawk) fatalities than other raptor species (Application Attachment P-7, page 23). Therefore, it is highly likely that the raptor fatalities at the Project will be comprised mostly of red-tailed hawks and golden eagles.

Disturbance of golden eagles is also very likely from proposed Project road construction and use of these roads. Current use of the existing roads in the Project area is very minimal. Therefore, the estimated "20,000 heavy duty round-trip truck deliveries" expected during the construction period (Application Exhibit U, page U-18) will likely have significant disturbance impacts on individual golden eagles, their nests and eggs in the Project area. Furthermore, a main transporter route identified for the Project construction period is located immediately adjacent to one known golden eagle nest and is approximately one mile from a second known golden eagle nest.

The Service has provided recommendations to avoid and minimize golden eagle take from Project construction and operation (USFWS 2009c; 2010a, b). Attachment 1 provides a comparison of these previous Service golden eagle recommendations and the Final ASC measures to avoid and minimize impacts to golden eagles. Our review of the ASC indicates the majority of the Service's recommended golden eagle avoidance and minimization measures associated with Project siting, construction, operation, monitoring, adaptive management, and other conservation measures have not been adequately addressed.

Given the Service's interest in supporting wind projects, the Service has actively initiated efforts with Horizon to better understand and study golden eagle use of the Project area, as well as initiate the development of a draft Avian and Bat Protection Plan (draft ABPP) (Horizon 2010) for the Project, that has an emphasis on golden eagles. Golden eagle use studies are scheduled to begin in the spring of 2011, and will begin to provide additional insights into golden eagle use in

the Project area. The draft ABPP's stated goals and objectives include avoidance, minimization, and mitigation of any unintentional take of golden eagles during construction and operation of the Project. However, the draft ABPP currently lacks specificity as to Horizon's commitments for avoidance and minimization measures for golden eagle, as well as any other compensatory mitigation measures for unavoidable take. The Service will not receive a more complete draft ABPP until after the Final ASC comment deadline. Additionally, by the Final ASC comment deadline, golden eagle studies will not have provided any additional site-specific golden eagle use information for proper turbine siting or other protective measures. Unfortunately, it appears that information from these golden eagle studies might not become available until after the Project is permitted, constructed, and operating, thereby greatly reducing opportunities during the preconstruction phase for incorporation of effective golden eagle avoidance and minimization efforts.

Raptors and Migratory Birds

The Service is concerned with the potential impacts to raptors and migratory birds, which likely occupy most of the Project area. Project baseline and supplemental studies documented 64 active raptor nests and 31 inactive raptor nests (Application Exhibit P, page P-30 and Application Attachment P-8, page 3). Additionally, the forest breeding bird surveys indicate the forested habitats within the Project area have a high abundance of migratory birds and overall bird diversity. Also, during these breeding bird surveys, five sensitive species were observed, emphasizing these forested areas are of high wildlife importance. The Service is concerned that, in these forested habitats, there is a greater risk of injury or mortality from turbine operations to species protected by the MBTA. As such, these forested habitats, with high migratory bird species diversity and population abundance, should be documented on Project habitat maps as ODFW Mitigation Policy Category 1 and/or 2 habitats, and appropriately buffered. The Service recommends wind turbines and/or other Project features not be placed within the forested areas where the breeding bird surveys found a high diversity of species present (75 species identified), as well as a high total number of birds observed.

In addition, a total of 64 active raptor nests have been identified for the Project area (Application Exhibit P, page P-30 and Attachment P-8, page 3). We recommend a one mile line-of-sight (or ½ mile non line-of-sight) construction and maintenance restriction between March 15 and August 15 for all currently active raptor nests. Additionally, during the 2010 supplemental raptor nest survey, an active goshawk nest was identified on Clark Mountain (Application Attachment P-8, page 3). The Service recommends a minimum of 30 acres of habitat surrounding the nest site be protected from disturbance and construction based on goshawk management recommendations in Reynolds (1992). These recommendations are in addition to Horizon's agreement to implement a ¼ mile setback from all "inactive and active general raptor nests, including burrowing owl nests" (Application Exhibit C, page C-4).

Bats

The Service is also concerned with the potential impacts to bats from the Project and the Project may have higher levels of bat mortality than other wind projects in Oregon because the Project area contains coniferous forest habitat. This concern is heightened given the highest reported fatality rates have occurred at "...facilities located along forested ridge tops in the eastern United

States” (Application Exhibit P, page P-57). In addition, baseline studies conducted for the Project suggest the “...presence of a resident breeding population” of hoary bats at the Site Boundary (Application Exhibit P, page P-34). While bat mortalities “during the breeding season are virtually non-existent” and “virtually all of the mortality occurred in late summer and early fall” at other wind projects in the United States (Application Exhibit P, page P-57 to P-60), forty-five percent of the bat fatalities at the adjacent Elkhorn Valley Project occurred during spring and summer (Application Exhibit P, page P-59). This suggests a substantial difference between the Elkhorn Valley Project and other cited wind projects in the United States. Given the proposed Project’s close proximity to the Elkhorn Valley project, it is likely that the proposed Project may also have bat fatalities that deviate temporally and in other ways from those found at wind energy facilities elsewhere.

Very little to no data exist to quantify bat population numbers or demographics in Oregon and very little data exist to indicate population trends, it is impossible to predict what level of additional mortality the populations can withstand without negative consequences. Any level of mortality caused by the proposed Project will be additive to natural mortality and impacts from the adjacent operating wind project. Given that the mortality caused by wind projects would be cumulative and that the population level effects of that mortality are entirely unknown, it is unknown what level of fatality per turbine or per KW is acceptable or at what level mitigation becomes necessary. Therefore, it is important to avoid bat mortalities whenever possible and to minimize bat mortalities when they cannot be avoided.

In order to avoid and/or reduce bat mortalities at the Project, the Service recommends measures such as programming changes in the turbine cut-in speeds, or altering when turbine rotors begin turning in low winds by changing the wind-speed trigger at which the turbine rotors are allowed to begin turning or by altering blade angles to reduce rotor speed as described in Arnett *et al.* (2010) and Baerwald *et al.* (2009). These strategies have been found to reduce bat fatalities at individual turbines by up to 82% (Baerwald *et al.* 2009; Arnett *et al.* 2010) with minimal loss of power generation annually. We recommend Project turbines be designed for cut-in wind speeds of 5.0 m/s or 6.5 m/s (Arnett *et al.* 2010) or that the turbines be configured with blade angles to reduce rotor speed as described in Baerwald *et al.* (2009).

In addition, the Service met with the Oregon Department of Fish and Wildlife (ODFW) on January 27 and February 3, 2011 to discuss the Project and to outline the recommendations and direction our respective agencies would be conveying in our comments on the Final ASC. The Service supports the bat minimization, monitoring and mitigation measures that, per our recent conversations, we anticipate will be further articulated in ODFW’s Project Final ASC comment letter. We recommend these measures be fully incorporated into the Project’s design, study plans and mitigation plans. We also request ODOE incorporate the necessary measures into the Project’s site certificate, should the Project be permitted.

Zone of Multiple Biological Values

The Service supports the Zone of Multiple Biological Values (ZMBV) as identified in ODFW’s May 6, 2010 letter (ODFW 2010), and per our recent conversations, we anticipate will be further articulated in ODFW’s Project Final ASC comment letter. The Service recommends no

construction (i.e., turbines, towers, roads, transmission lines, etc.) within the identified ZMBV. The Service considers the ZMBV to contain important wildlife habitat due to the presence of the following characteristics and features:

- Four known active golden eagle nests;
- Golden eagle flyway;
- Five active raptor nests (red-tailed hawk and Swainson's hawk);
- Two active burrowing owl nests;
- Potential sage-grouse lek;
- Year-round sage-grouse habitat;
- Big Game Critical Wildlife Habitat; and
- Two known historic golden eagle nests within four miles of ZMBV.

The Service believes the ZMBV is the first necessary step to begin addressing the proposed Project's numerous impacts to wildlife. We request ODOE incorporate the necessary measures into the Project's site certificate, should the Project be permitted.

Habitat Mitigation

The Service believes the habitat mitigation measures proposed in the Final ASC are inadequate to mitigate for the above-mentioned wildlife and habitat impacts. However, the Service supports the wildlife and habitat mitigation measures discussed with ODFW at the February 3, 2011 meeting, and per our recent conversations, we anticipate will be further articulated in ODFW's Project Final ASC comment letter. We recommend these measures be fully incorporated into the Project's design, study plans and mitigation plans. We also request ODOE incorporate the necessary measures into the Project's site certificate, should the Project be permitted.

Recommended Site Certificate Conditions

The Service requests that, should this Project be permitted, the following conditions be incorporated into the final permit:

- Implement the recommended Zone of Multiple Biological Values (ZMBV) in which no Project features would be constructed. The Service strongly recommends the implementation of this ZMBV to help protect many important wildlife resources in the area.
- Prevent construction of tall structures (i.e., turbines, towers, overhead transmission lines, etc.) within 1.4 miles from the potential sage-grouse lek site.
- Prevent surface disturbance, including road construction, within 0.5 mile of the potential lek site.
- Prevent construction or regular maintenance within 2 miles of the potential lek site between March 15 and June 30.

- Protect at least 30 acres of habitat surrounding the goshawk nest observed in 2010 from Project-related disturbance, construction and/or development.
- Restrict construction and maintenance activities to times outside March 15 through August 15 within 1 mile of an active raptor nest (or ½ mile if active nest is not in line-of-sight of activities) to avoid Project access-related disturbance impacts to nesting raptors.
- Monitor the potential lek site for 7 years post-construction using ODFW’s current lek survey protocols.
- Develop a technical work group that consists of wildlife professionals (i.e., representatives from ODFW, the Service, Horizon and other appropriate professionals) for the Project. Due to the many wildlife and resource complexities of this Project, the anticipated habitat and wildlife impacts, and that mitigation is dependent upon outcomes of studies that are currently in progress or yet to be started (i.e., big game telemetry study, golden eagle telemetry study, and forest breeding bird survey) the Service believes a workgroup is essential to ensure appropriate monitoring is conducted and impacts are appropriately mitigated upon completion of these studies.

Compliance with Policies and Laws Administered by the Service

The Service has now published draft Guidance for conservation actions necessary to obtain a programmatic eagle take permit. The Service recommends that the Project apply for a take permit, as soon as final Guidance is available, for the construction and operation of the Project. However, based on the draft Guidance, we emphasize that programmatic eagle take permits will only be issued for unavoidable eagle take at wind projects that successfully implement avoidance and minimization measures to the maximum degree technically achievable; where eagle take is consistent with the preservation standard of increasing or stable breeding eagle populations and under golden eagle preservation thresholds established in the FEA (USFWS 2009b); and in habitats not considered “Category 1 – high risk”.

The Service’s review of the Final ASC indicates that previous Service avoidance and minimization recommendations have not adequately been incorporated into the Final ASC. Our preliminary determination, based on the draft Guidance, is that the Project would be categorized as a “Category 1 – high risk” site. The Project currently lacks substantive protective commitments to adequately avoid and minimize take of golden eagles. While Horizon’s commitment to gather additional golden eagle use data from the Project area and to discuss future protective measures that may be included in the Project’s draft ABPP are important and useful, these data will largely be unavailable for additional pre-construction design. Therefore, for the above reasons, the Service is concerned that the Project, as currently proposed in the Final ASC, may not meet the regulatory requirements for programmatic eagle take permit issuance per 50 CFR 22.26 and as directed in the draft Guidance.

Conclusion

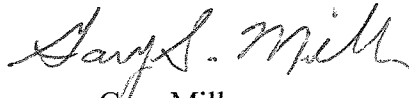
The Service appreciates the opportunity to comment on the Final ASC. Throughout this energy facility siting process, the Service and Horizon have reached agreement on some issues, but

many remain. The Service continues to have concerns with this Project, including the lack of appropriate habitat categorization mapping, lack of protection for forested habitats and high numbers and diversity of migratory birds, and lack of commitment to minimize bat fatalities. The Service is especially concerned that the lack of golden eagle avoidance and minimization measures and Project siting in "Category 1 – high risk" habitat may not meet the regulatory requirements for issuance of a programmatic eagle take permit.

As noted in our introduction, the Service supports wind projects that are carefully sited and operated such that they minimize impacts to the nation's trust resources. The Service wants to continue to assist the Project in the careful assessment, design, mitigation, monitoring and future adaptive management actions for the Project. We would like to continue working with ODOE, Horizon and other interested parties to further the balancing of developing wind energy and protecting fish, wildlife and plant resources.

If you have any questions regarding the Service's comments or desire to meet with us to discuss these issues further, please contact Marisa Meyer or me at (541) 962-8584, or Doug Young, Energy Program Manager at (503) 231-6179.

Sincerely,



Gary Miller
Field Supervisor

Attachment

cc:

Christina Calabrese, Horizon Wind Energy, Houston, Texas
Derek Rieman, Horizon Wind Energy, Houston, Texas
Valerie Franklin, Horizon Wind Energy, Portland, Oregon
Arlo Corwin, Horizon Wind Energy, Portland, Oregon
Hanley Jenkins, Union County Planning Department, La Grande, Oregon
Craig Ely, Oregon Department of Fish and Wildlife, La Grande, Oregon
Mike Green, U.S. Fish and Wildlife Service, R1 Migratory Birds, Portland, Oregon
Stefanie Stavrakas, U.S. Fish and Wildlife Service, R1 Ecological Services, Portland, Oregon
Robert Romero, U.S. Fish and Wildlife Service, R1 Law Enforcement, Wilsonville, Oregon
Paul Henson, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, Portland, Oregon
Nancy Gilbert, U.S. Fish and Wildlife Service, Bend Field Office, Bend, Oregon

Literature Cited

- Arnett, E. B., M. M. P. Huso, J. P. Hayes, and M. Schirmacher. 2010. Effectiveness of changing wind turbine cut-in speed to reduce bat fatalities at wind facilities. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas.
- Baerwald, E.F, J. Edworthy, M. Holder, and R.M.R. Barclay. 2009. A large-scale mitigation experiment to reduce bat fatalities at wind energy facilities. *J. Wildl. Manage.* 73(7):1077-1081.
- Chamberlain, D.E., M.R. Rehfisch, A.D. Fox, M. Desholm, and S. J. Anthony. 2006. The effect of avoidance rates on bird mortality predictions made by wind turbine collision risk models. *Ibis* 148:198-202.
- Horizon Wind Energy. 2010. Draft Outline. Avian Protection Plan for the Antelope Ridge Wind Farm, Union County, Oregon.
- Hunt, W.G. 1998. Raptor floaters at Moffat's equilibrium. *Oikos* 82:191-197.
- Krone, O. 2003. Two white-tailed sea eagles (*Haliaeetus albicilla*) collide with wind generators in northern Germany. *Journal of Raptor Research* 37:174-176.
- ODFW. 2010. Comments on Antelope Ridge Wind Farm. May 6, 2010.
- Reynolds, R.T.; R.T. Graham, M.H. Reiser, and others. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep. RM-217, Ft. Collins, Colorado. U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90 p.
- USFWS. 2011. Draft Eagle Conservation Plan Guidance. U.S. Fish and Wildlife Service, January 2011. 105 pp.
- USFWS. 2010a. Comments on the Antelope Ridge Wind Project Response to the First Request for Additional Information (13420-2010-CPA-0109). Letter to ODOE, May 17, 2010.
- USFWS. 2010b. Golden Eagle Avoidance Measures for the Proposed Antelope Ridge Wind Farm Project, Union County, Oregon (13420-2010-CPA-0161). Letter to Horizon Wind Energy, September 20, 2010.
- USFWS. 2009a. Final environmental assessment. Proposal to permit take provided under the Bald and Golden Eagle Protection Act. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Washington D.C., USA.
- USFWS. 2009b. Eagle permits; take necessary to protect interests in particular localities. *Federal Register* 74(175):46836-46879.

USFWS. 2009c. Comments on Completeness of the Antelope Ridge Wind Project Preliminary Application for an Energy Facility Site Certificate (13420-2010-FA-0012). December 1, 2009.

USFWS. 2007. Protection of eagles; definition of "Disturb." Federal Register 72(107): 31132-31140.

Summary of Service Comments on the Proposed Antelope Ridge Project

Previous Service Recommendation (provided in formal letters)	Date of Letter	Horizon's Response	Recommendation Incorporated into Application?
<p>Conduct two years of bat surveys in a manner that will not only help determine bat migratory patterns, but also any patterns in local movements through the project area, as well. The hoary bat (<i>Lasiurus cinereus</i>) and silver-haired bat (<i>Lasiurus noctivagus</i>) appear to be at the greatest risk from collision with wind turbines and other turbine-associated mortalities in the Pacific Northwest.</p> <p>Conduct two years of bat acoustic surveys and/or sampling using a combination of Petterson bat detectors and Anabat bat detectors. Each type of detector has its advantages and disadvantages. For example, more data can be displayed for each call using the Petterson detectors the Sonobat software; however, a time record is not available with this type of hardware. Conversely, the Anabat detectors capture time records for each call to help determine peak bat activity; however, individual species identifications are not possible with this type of hardware. We recommend studies be conducted at a minimum of ten sites within the proposed project area.</p> <p>Conduct one full year (including at least one spring migration season and one fall migration season) of avian and bat radar studies using marine surveillance radar. These studies will provide information on passage rates, flight directions, flight paths, and altitude of nocturnal bats and birds. We recommend month-long radar studies be conducted mid-April through mid-May and in the months of September and October. These studies should be conducted at a minimum of two sites within the proposed project area.</p> <p>Conduct avian displacement studies that target forest-dwelling birds. Ideally the displacement study would include the entire project area (i.e., shrub, grassland and forested habitats). Most displacement studies associated with wind power projects to date have been conducted for grassland nesting birds. Therefore, impacts to forest-dwelling birds and their habitats from wind power projects in the Northwest are largely unknown. We recommend the survey protocol be coordinated with the ODFW's non-game biologist Chris Carey. We recommend a minimum of two years pre-project construction survey and two years post-project construction survey be completed.</p> <p>Conduct a portion of surveys for birds and bats near water sources (i.e., riparian areas, wetland areas, creeks, ponds, etc.) in the project corridor that are near any proposed turbine strings.</p> <p>Monitor the existing sage-grouse lek for sage-grouse activity, search for additional lek sites within the project area using ODFW's lek counting procedures and lek search procedures (Hagen 2005), and determine other important sage-grouse use of the proposed project area (e.g. wintering habitat). We recommend a minimum of two years pre-project construction survey, as well as, the first two years post-project construction survey and a five year post-project construction survey be completed.</p>	<p>5/29/2009; 12/1/2009</p>	<p>Agreed 3/12/2010 (letter)</p>	<p>Movement patterns were not studied, only timing of migration identified</p>
<p>Conduct a big game survey, and determine potential for displacement of big game from important habitats. We recommend the survey protocol and displacement study be coordinated with Northeast Region ODFW biologists Jim Cadwell, Leonard Erickson, and Jon Paustian.</p>	<p>5/29/2009</p>	<p>Agreed 10/15/2009 (letter)</p>	<p>Unclear as to whether Petterson detectors were used in pre-construction surveys</p>
<p>Conduct the fixed point avian use surveys, raptor nest surveys, and sensitive species surveys (development corridors) as described in the draft Wildlife Resources Study Plan.</p>	<p>5/29/2009</p>	<p>Agreed 10/15/2009 (letter)</p>	<p>No discussion in Application</p>
<p>Comply with the sage-grouse conservation guidelines that pertain to the proposed project contained in the Greater Sage-grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2005).</p>	<p>5/29/2009</p>	<p>Agreed; monitoring for 7-year post construction monitoring; using ODFW 2010 protocols</p>	<p>Portion of pre-construction surveys were completed near water sources.</p>
<p>Avoid placing new wind turbines within five miles of the nearest sage-grouse lek site (note: the Service soon will be meeting with BLM and ODFW to discuss appropriate spatial protection zones for sage-grouse leks). The sage-grouse lek that was discovered in spring 2009 is within 1.4 miles of the existing Elkhorn Wind Farm (owned and operated by Horizon). However, we recommend no new wind turbines at the Antelope Ridge project area are placed within five miles of this lek site to avoid completely surrounding the known lek site with wind turbines.</p>	<p>5/29/2009</p>	<p>Agreed 10/15/2009 (letter); working w/ ODFW on big game telemetry study</p>	<p>Attachment P-13, pg. 14-15; Attachment K-9</p>
<p>Avoid placing above-ground transmission lines within two miles of the nearest sage-grouse lek site to prohibit use of these transmission facilities by perching raptors near lek sites and to also avoid further fragmentation of sage-grouse habitat near lek sites.</p>	<p>5/29/2009</p>	<p>Agreed; Followed draft Wildlife Resources Study Plan</p>	<p>Attachment P-6</p>
<p>Avoid placing roads, buried power lines, etc. within 0.5 miles of the nearest lek site to avoid further fragmentation of sage-grouse habitat and the introduction of any noxious weeds into the area.</p>	<p>5/29/2009</p>	<p>Declined; Instead using lek buffer: 1.4 miles for tall structures, 0.5 miles for other features</p>	<p>Application Exhibit C, pg. 4</p>
<p>Avoid developing within 0.5 miles of critical brood rearing habitats such as seeps, springs, and wet meadows to avoid further fragmentation of sage-grouse habitat and to allow for continued use of these areas by sage-grouse.</p>	<p>5/29/2009</p>	<p>Declined; Instead using lek buffer: 1.4 miles for tall structures, 0.5 miles for other features</p>	<p>Application Exhibit C, pg. 4</p>
<p>Avoid construction and maintenance of roads and other infrastructure (i.e., power lines, turbines, etc.) near sage-grouse breeding habitats between two hours before to two hours after sunrise from March 1 to June 15 to minimize impacts to breeding and nesting behaviors of sage-grouse and other shrub steppe obligate species.</p> <p>Use a 0.25 mile setback for turbine locations from any ponds, streams, and wetlands (not used by sage-grouse) within the project area. Because ponds, streams, and wetlands serve as a consistently dependable food resource, concentrated foraging and roosting by bird and bat species are expected to occur, potentially increasing the bird and bat fatality rate caused by any nearby turbines. Turbine setback from areas of wildlife concentration is an important method to minimize any project-related mortality to bird and bat species.</p>	<p>5/29/2009</p>	<p>Declined; No nest setbacks for roads, power lines, etc. In fact, major transporter road is immediately adjacent to eagle nest and anticipate 20,000 round-trip truckloads are needed to built Protect.</p>	<p>No; Siting roads, etc. immediately adjacent to meadows, seeps; Application C, J and P</p>
<p>Avoid developing within 0.5 miles of active eagle nests (line-of-sight) and within 0.25 miles (non line-of-sight) of active eagle nests.</p>	<p>5/29/2009</p>	<p>Declined</p>	<p>Application U; Attachment U-2; Attachment U-11</p>
<p>Use a 200-foot construction buffer from any stream to minimize construction and maintenance impacts on the stream's water quality and riparian vegetation.</p> <p>Develop a Technical Advisory Committee (TAC) that would specifically deal with the proposed Antelope Ridge project. Due to the high natural resource concerns associated with the proposed project, we recommend a dedicated TAC be established to review monitoring results and make recommendations regarding mitigation and monitoring requirements.</p>	<p>5/29/2009</p>	<p>Declined</p>	<p>No discussion in Application</p>
<p>Use a 200-foot construction buffer from any stream to minimize construction and maintenance impacts on the stream's water quality and riparian vegetation.</p>	<p>5/29/2009; 12/1/2009</p>	<p>Incorporated 3/12/2010; backed out of commitment in response to RAI 2 (Sept 23, 2010)</p>	<p>No discussion in Application</p>

Summary of Service Comments on the Proposed Antelope Ridge Project

Previous Service Recommendation (provided in formal letters)	Date of Letter	Horizon's Response	Recommendation Incorporated Into Application?
<p>Identify the decommissioning process for the proposed facility. The expected life span of the project and decommissioning process should be included in the analysis of impacts of the facility. The decommissioning process should also discuss the cleanup, decontamination, and required restoration of the shrub-steppe habitat structure necessary for sage-grouse and other shrub-steppe wildlife species.</p> <p>Avoid all impacts to category 1 habitats, including sagebrush habitat within 3 miles of a sage-grouse lek.</p>	5/29/2009	Agreed	Application Exhibit W
<p>Provide mitigation for shrub steppe communities impacted by the proposed project at a minimum 2:1 compensatory ratio described in the Oregon Department of Fish and Wildlife Habitat Mitigation Policy (AR 635, Division 415) (or higher mitigation ratio as inferred by the Guidelines for habitat category 2 and high quality 3). Include a management and monitoring plan with funding for management and monitoring of the mitigation site. Describe how and where restoration at the mitigation site will occur, protection and maintenance of these mitigation sites need to be for the life of the facility, regardless of operator.</p>	5/29/2009	Declined; Argues ODFW does not interpret policy correctly	Application Exhibit C; Attachment C-8; Application Exhibit P
<p>Provide mitigation for springs, seeps and wetlands impacted by the proposed project at a 2:1 compensatory ratio described in the Oregon Department of Fish and Wildlife Habitat Mitigation Policy (AR 635, Division 415) (or higher mitigation ratio as inferred by the Guidelines for habitat category 2 and high quality 3). Include a management and monitoring plan with funding for management and monitoring of the mitigation site. Describe how and where restoration at the mitigation site will occur, protection and maintenance of these mitigation sites need to be for the life of the facility, regardless of operator.</p>	5/29/2009	Declined; Argues ODFW does not interpret policy correctly	Application Exhibit C; Attachment C-8; Application Exhibit P
<p>Provide mitigation for all other habitat communities impacted by the project at a compensatory ratio described in the Oregon Department of Fish and Wildlife Habitat Mitigation Policy (AR 635, Division 415) (or ratios as inferred by the Guidelines).</p> <p>Develop a formal monitoring and mitigation plan to ensure that any revegetation and/or habitat restoration actions implemented as part of project mitigation are effective for the life of the facility, regardless of operator. The mitigation plan needs to contain clear provisions describing: (a) responsible party(ies) for post-construction biological surveys; (b) responsible party(ies) for implementing and evaluating mitigation measures; (c) responsible party(ies) for maintaining restored habitats; and (d) a description of how the long-term habitat restoration efforts will be accomplished. Native plant species should be utilized to the extent possible. For areas where originally-high quality habitat is being restored, use containerized plants (e.g., sagebrush) to enhance survival and speed of full site recovery.</p> <p>Use turbine cut-in speeds of 5.0 m/s or 6.5 m/s for each turbine on the proposed project. There is evidence that bat mortality caused by wind turbines can be significantly reduced by simply increasing the wind speed at which the turbines are programmed to begin generating electricity into the grid (i.e., the cut-in wind speed) (Arnett <i>et al.</i>, 2009). Arnett <i>et al.</i> (2009) found nightly reductions in bat fatality ranged from 53-87 percent when turbines were programmed to use the 5.0 m/s and/or 6.5 m/s cut-in speeds, with marginal annual power loss.</p>	5/29/2009	Declined; Argues ODFW does not interpret policy correctly	Application Exhibit C; Attachment C-8; Application Exhibit P
<p>Two years of pre-project assessment should be completed to obtain baseline information on eagle nest productivity; use of feeding, roosting, nesting or wintering areas; eagle movements in relation to each proposed turbine location (including an analysis of spatial use in relation to rotor swept zone); numbers of eagles moving through the project area; movements in relation to meteorological conditions; and phenology of movements. Eagle movement studies should include more intense observations (at least 20 days for two years during nesting season [June through early October] when adult eagles and their fledged young are most active). Information on migrating eagles should be collected as part of raptor migration surveys.</p>	5/29/2009	Declined	No discussion in Application
<p>Prior to "micrositing" the Project's turbines, information collected on eagle migration and movement data should be analyzed to develop a quantitative risk assessment of the likelihood of incidental take of bald and golden eagles (including disturbance, disruption, injury, and death) (16 U.S.C. 668-668c; 50 CFR Part 22, and National Bald Eagle Management Guidelines). If the quantitative risk assessment suggests that incidental take of eagles is likely, Horizon should employ "micrositing" measures for the Project's turbines to fully avoid any incidental take of eagles. If the risk assessment suggests that incidental take of eagles is not likely, but important eagle feeding, roosting, nesting or wintering areas are nearby or migratory eagles frequent the Project area, then monitoring of eagle nests and any turbine-related injury or mortality is recommended throughout the life of the Project to periodically reassess risk to eagles as protected under the BGEPA.</p>	12/1/2009; 5/17/2010	Agreed; Conducting telemetry surveys in 2011	No discussion in Application
<p>The Project's ODFW Mitigation Policy habitat categories are not correctly mapped, resulting in areas of the Project that are proposed in Category 1 and 2 habitats. Any Project development in Category 1 and 2 habitats is not in full compliance with the Guidelines.</p> <p>Wind turbines and other Project features are proposed within the "notably high area of use by raptors and waterfowl" near Jimmy Creek Reservoir (Category 2 habitat). A 0.25 mile setback from this "high area of use" for turbine locations and other above-ground Project features would be a positive step towards more successful "micrositing" application of the Guidelines.</p>	12/1/2009	Declined; Completed analysis, however, has not proposed adequate measures to avoid take.	No discussion in Application
<p>Wind turbines and other Project features should not be placed within the forested areas where the breeding bird surveys found a very diverse number of species present (75 species identified), as well as a higher total number of birds observed compared to all other survey stations within the Project boundary. A total of 3,648 bird observations were recorded during the forest breeding bird surveys compared to 2,947 birds observed at all other 12 survey stations combined. These forested habitats, with high migratory bird species diversity and population abundance, should be documented on Project habitat maps as ODFW Mitigation Policy Category 1 and/or 2 habitats, and appropriately buffered during "micrositing". A 0.25 mile setback from these forested areas for turbine locations and other above-ground Project features would be a positive step towards more successful "micrositing" application of the Guidelines.</p>	12/1/2009	Declined; Argues ODFW does not interpret policy correctly	Application Exhibit C; Attachment C-8; Application Exhibit P
<p>Wind turbines and/or other Project features should not be placed within the forested areas where the breeding bird surveys found a very diverse number of species present (75 species identified), as well as a higher total number of birds observed compared to all other survey stations within the Project boundary. A total of 3,648 bird observations were recorded during the forest breeding bird surveys compared to 2,947 birds observed at all other 12 survey stations combined. These forested habitats, with high migratory bird species diversity and population abundance, should be documented on Project habitat maps as ODFW Mitigation Policy Category 1 and/or 2 habitats, and appropriately buffered during "micrositing". A 0.25 mile setback from these forested areas for turbine locations and other above-ground Project features would be a positive step towards more successful "micrositing" application of the Guidelines.</p>	12/1/2009	Agreed	Application Exhibit P, pg P-70
<p>Based on above updated information, species/habitat mapping, and additional studies, undertake additional "micrositing" of turbines and other Project features to ensure the following resources are fully protected: sage-grouse lek and associated habitats; raptor nests and raptor movement and migration areas; forested habitats containing high diversity of migratory birds; and big game winter range and critical habitat.</p>	12/1/2009	Declined; Using 50 m setback instead	Application Exhibit C, pg 4; Application Exhibit P, pg P-70
<p>Based on above updated information, species/habitat mapping, and additional studies, undertake additional "micrositing" of turbines and other Project features to ensure the following resources are fully protected: sage-grouse lek and associated habitats; raptor nests and raptor movement and migration areas; forested habitats containing high diversity of migratory birds; and big game winter range and critical habitat.</p>	12/1/2009	Declined; Instead proposed breeding bird displacement study instead	Attachment P-13, pg. 13
<p>Based on above updated information, species/habitat mapping, and additional studies, undertake additional "micrositing" of turbines and other Project features to ensure the following resources are fully protected: sage-grouse lek and associated habitats; raptor nests and raptor movement and migration areas; forested habitats containing high diversity of migratory birds; and big game winter range and critical habitat.</p>	12/1/2009	Declined; No updated mapping has occurred; Argues ODFW does not interpret policy correctly	Application Exhibit C; Attachment C-8; Application Exhibit P

Summary of Service Comments on the Proposed Antelope Ridge Project

Previous Service Recommendation (provided in formal letters)	Date of Letter	Horizon's Response	Recommendation Incorporated into Application?
<p>Information on the available data on wildlife impacts associated with existing wind projects and activities within the general area of the proposed Project and the anticipated cumulative impacts of the Project. The Project's cumulative impacts assessment should include information on previous habitat loss, fragmentation, degradation, wildlife displacement and mortality data from adjacent wind projects, and an estimation of the additional cumulative impact of the proposed Project on a limited number of key species (i.e., ferruginous hawk, sage-grouse, elk, mule deer, etc.) that could be adversely affected by additional mortality or are highly sensitive to disturbances or habitat loss. The following should be considered part of the Project's cumulative impact assessment in the vicinity of the Project: (1) Current declining trend of the northeast Oregon sage-grouse population, (2) Previous loss and degradation of elk and mule deer winter range, (3) Information provided from the pre- and post-construction avian and bat monitoring study for the adjacent Eikhorn Valley Wind Project, and (4) Information provided from the pre- and post-construction big game monitoring study for the adjacent Elkhorn Valley Wind Project.</p>	<p>12/1/2009; 5/17/2010</p>	<p>Declined; No cumulative analysis conducted</p>	<p>No discussion in Application</p>
<p>Corrected habitat map showing appropriate ODFW Fish and Wildlife Habitat Mitigation Policy habitat categories for big game winter range and critical habitat (correctly defined as Category 2 habitat) and sagebrush habitats, wet meadows and native grasslands within the ODFW 3-mile protection area around the sage-grouse lek (correctly defined as Category 1 habitat).</p>	<p>12/1/2009</p>	<p>Declined; No updated mapping has occurred; Argues ODFW does not interpret policy correctly</p>	<p>Application Exhibit C, Attachment C-8, Application Exhibit P</p>
<p>As an initial effort to ensure no take of golden eagles, implement a Zone of Multiple Biological Values (ZMBV) that would include precluding turbine siting adjacent to active golden eagle nests. The Service strongly recommends the implementation of this ZMBV to help protect the four known active golden eagle nest sites and the golden eagles that currently use and will continue in the future to use the Project area. The Service considers the ZMBV to contain important wildlife habitat due to the presence of the following characteristics and features:</p> <ul style="list-style-type: none"> - Four active golden eagle nests; - Golden eagle flyway (as discussed in the ASC, page P-24); - Five active raptor nests (red-tailed hawk and Swainson's hawk); - Two active burrowing owl nests; - Potential sage-grouse lek; - Year-round sage-grouse habitat; - Big Game Critical Wildlife Habitat; and - Two historic golden eagle nests within four miles of ZMBV. 	<p>5/17/2010</p>	<p>Declined; No mention of ZMBV, instead 2,000 acre area on Rano Flat will not have turbines. However, this area is not identified on maps anywhere, nor is it discussed if there will be roads, etc. developed.</p>	<p>Application Exhibit C, pg 4, Application Exhibit P, pg P-68 through P-72</p>
<p>Follow the recommendations in the Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance (Pagel <i>et al.</i> 2010). These data are necessary (even if the ZMBV is implemented) to carefully site other turbines since golden eagle injury or mortality is still possible outside of the ZMBV. In addition, these data are likely necessary for any future permitting activities under BGEPA.</p>	<p>5/17/2010</p>	<p>Partially agreed; Conducting telemetry surveys in 2011</p>	<p>No discussion in Application</p>
<p>Complete nest surveys within six miles of the Project location</p>	<p>9/20/2010</p>	<p>Agreed; Conducting nest surveys in 2011</p>	<p>No discussion in Application</p>
<p>Conduct observation-post studies to observe the behavior of the adults (if present) without disturbing nesting behavior. These studies collect information on territory occupancy, productivity, foraging and winter habitat, and other information per the Interim Golden Eagle Inventory and Monitoring Protocols (Pagel <i>et al.</i>, 2010).</p>	<p>9/20/2010</p>	<p>Partially agreed; Conducting telemetry surveys in 2011</p>	<p>No discussion in Application</p>
<p>Satellite telemetry of nesting golden eagles within six miles of the proposed Project location.</p>	<p>9/20/2010</p>	<p>Agreed; Conducting telemetry surveys in 2011</p>	<p>No discussion in Application</p>
<p>To avoid golden eagle collisions with above-ground collector or larger transmission lines, above-ground transmission facilities should be sited where golden eagle studies (above) indicate lowest areas of golden eagle use.</p>	<p>9/20/2010</p>	<p>Declined; No mention in Application, building power lines to APLIC standards only.</p>	<p>Application Exhibit P, pg P-69 through P-71</p>
<p>To avoid Project access-related disturbance impacts to nesting golden eagles, a golden eagle protection plan (GEPP) should ensure all new roads are designed and sited at least one mile away from any active or inactive golden eagle nests (line-of-sight) or minimum of 1/2 mile (not line-of-sight).</p>	<p>9/20/2010</p>	<p>Declined; No nest setbacks for roads, power lines, etc. In fact, major transporter road is immediately adjacent to eagle nest and anticipate 20,000 round-trip truckloads are needed to build Project.</p>	<p>Application U; Attachment U-2; Attachment U-11</p>
<p>Construction and maintenance activities between January 1 and July 15 should not be conducted within 1 mile of an active nest (or 1/2 mile if active nest is not in line-of-sight of activities).</p>	<p>9/20/2010</p>	<p>Declined</p>	<p>No discussion in Application</p>
<p>The Project's GEPP should include annual monitoring of golden eagle territories that overlap with the Project to measure territory occupancy, reproductive success, productivity, and timing of movements and migrations within the Project area using methods in Pagel <i>et al.</i> (2010).</p>	<p>9/20/2010</p>	<p>Discussions RE: GEPP, but have not seen substantive draft GEPP to determine if recommendation has been incorporated.</p>	<p>No discussion in Application</p>
<p>A GEPP should further commit to application of these monitoring data into rapid modification of turbine operations (e.g., curtailment of turbine operations), responsive to seasonal and annual variations in Project area use by golden eagles, to ensure the Project continues to implement real-time golden eagle mortality avoidance measures over the life of the Project.</p>	<p>9/20/2010</p>	<p>Declined; no discussion of modifying operations as an avoidance or mitigation measure</p>	<p>No discussion in Application</p>
<p>Develop and implement a golden eagle monitoring plan (including monitoring of Project-related golden eagle mortality, territory occupancy, nest success, and productivity) over the life of the Project to ensure that if golden eagles are killed by wind turbines (or other Project features) or there are other impacts to golden eagles from the Project, that these mortalities and/or impacts are immediately identified and reported.</p>	<p>9/20/2010</p>	<p>Discussions RE: GEPP, but have not seen substantive draft GEPP to determine if recommendation has been incorporated.</p>	<p>No discussion in Application</p>
<p>Develop and implement an adaptive management plan (including commitments for turbine shut-down and/or removal, if necessary) that effectively addresses any identified threats or impacts to golden eagles</p>	<p>9/20/2010</p>	<p>Declined; no discussion of modifying operations as an avoidance or mitigation measure</p>	<p>No discussion in Application</p>
<p>Implement golden eagle conservation actions immediately, and over the life of Project, to offset any remaining impacts to ensure stable or increasing breeding golden eagle in the local-area population.</p>	<p>9/20/2010</p>	<p>Declined</p>	<p>No discussion in Application</p>

Summary of Service Comments on the Proposed Antelope Ridge Project

Previous Service Recommendation (provided in formal letters)	Date of Letter	Horizon's Response	Recommendation Incorporated Into Application?
Fund, install and monitor satellite transmitters on adult and fledgling golden eagles at active golden eagle nest sites in the vicinity of Horizon's planned and operating wind project sites. If historical nest sites adjacent to Horizon's planned or operating project sites should become active, Horizon should also fund, install and monitor satellite transmitters on those golden eagles and their young as well. These data will give us local use information of the birds, as well as fate of the fledged young. The project design and data collection will be collaborative between Horizon and the Service, and the collected data will be made available to golden eagle researchers and agencies.	9/20/2010	Agreed; Conducting telemetry surveys in 2011	No discussion in Application
Submit funds to a third party for use in the inventory of golden eagles across the West. The Service is currently in the process of identifying an appropriate third party repository for these studies.	9/20/2010	Discussions RE: GEPP, but have not seen substantive draft GEPP to determine if recommendation has been incorporated.	No discussion in Application
Ensure the Project results in no net loss or an increase in golden eagles in the local-area population via conservation actions listed in 9/20/2010 letter.	9/20/2010	Declined	No discussion in Application
Provide an annual report and review of golden eagle mortality and productivity data to the Service.	9/20/2010	Discussions RE: GEPP, but have not seen substantive draft GEPP; Horizon has verbally committed to coordinating and reporting to the Service	No discussion in Application
Report any mortality or injury discovery within 24 hours to the Service's Wilsonville Office of Law Enforcement first, and then the Portland Regional Office and the La Grande Field Office, and arrange for transfer of carcass to the Service immediately.	9/20/2010	Agree; Part of Wildlife Incident Reporting System (WIRS)	Attachment p-13, Appendix A, pg. 4
Conduct the golden eagle mortality census surveys monthly at all turbines.	9/20/2010	Discussions RE: GEPP, but have not seen substantive draft GEPP to determine if recommendation has been incorporated. Application state 2 years of fatality monitoring and may not monitor every turbine.	Attachment P-13, pg. 3
Survey all turbine locations via a census-model mortality survey to ensure every golden eagle carcass is collected.	9/20/2010	Discussions RE: GEPP, but have not seen substantive draft GEPP to determine if recommendation has been incorporated. Application state 2 years of fatality monitoring and may not monitor every turbine.	Attachment P-13, pg. 3