

Kittitas Valley Wind Power Project

SEPA Checklist

Appendix 3

Biological Assessment
Endangered, Threatened, Proposed & Candidate Species

Kittitas Valley Wind Power Project

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1.0 INTRODUCTION

The purpose of this Biological Assessment (BA) is to determine if the proposed Horizon Wind Energy (Horizon) Kittitas Valley Wind Power Project, Kittitas County, Washington, will adversely affect threatened and endangered species potentially occurring in the Project area. Also, the BA will determine if the Project will jeopardize the continued existence of candidate species or species proposed for listing under the Endangered Species Act (ESA).

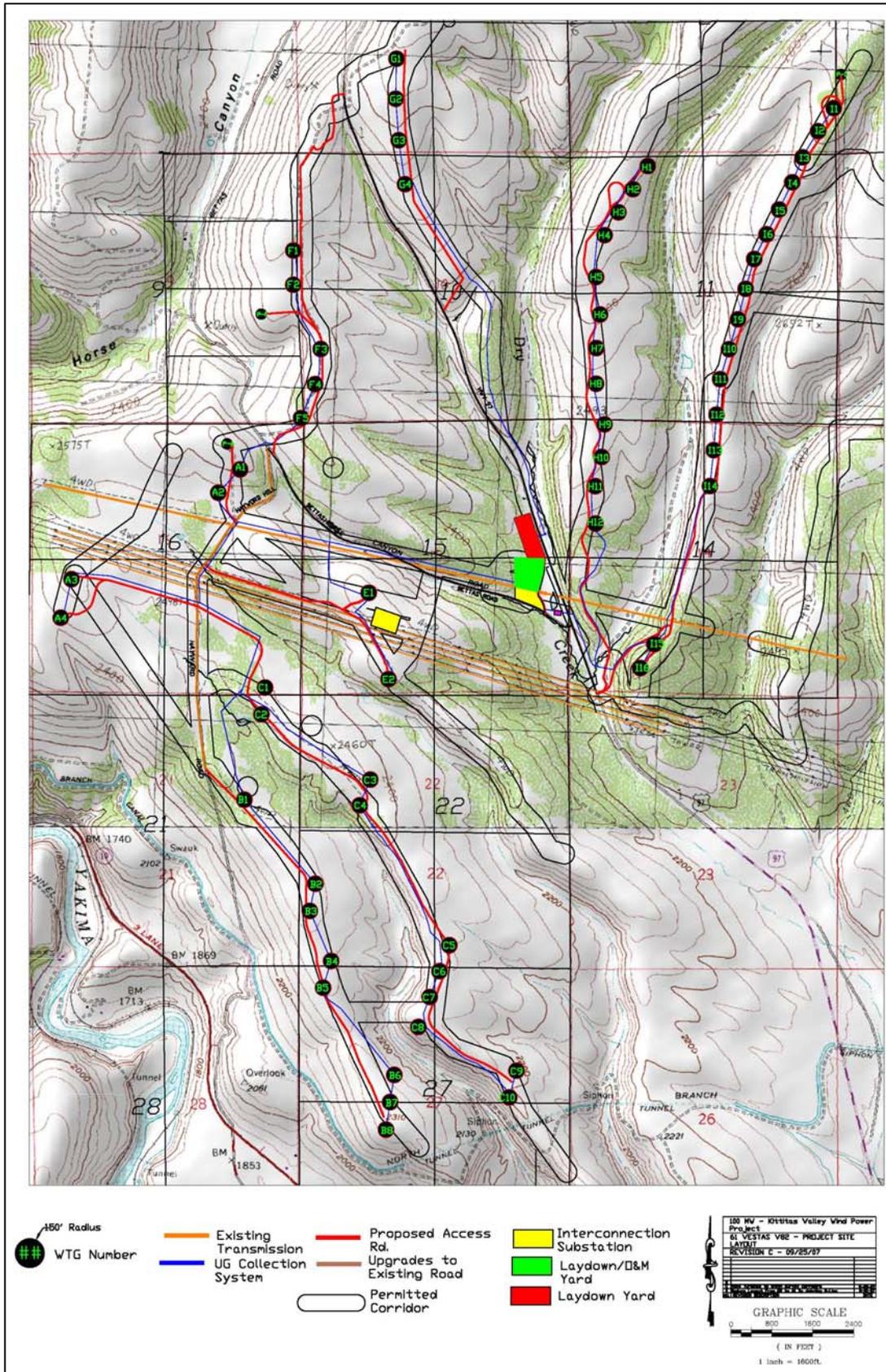
The ESA requires preparation of a BA for major construction projects proposed under federal authority. While there is currently no federal nexus with the proposed Project, future transmission interconnection may require approval by the Bonneville Power Administration (BPA). As a federal agency, BPA is required to consult with the US Fish and Wildlife Service (USFWS) to insure that actions proposed, permitted, or funded by BPA do not adversely affect threatened or endangered species or adversely modify designated critical habitat.

The actions being evaluated under this BA are the proposed construction, maintenance, and operation of a 100 megawatt (MW) wind power project in Kittitas County, Washington, north and west of the town of Ellensburg. Horizon plans to construct, operate, and maintain 61 wind turbines on approximately 5,500 acres (2020 hectares;ha) of leased private land east and west of US Highway 97, and north of Interstate 90 between Cle Elum and Ellensburg, Washington. The BA provides a summary of the available information regarding listed species in the area and an analysis of the potential for the proposed Project to affect the listed species.

2.0 PROJECT DESCRIPTION

The proposed Project would consist of the installation, operation, maintenance, and eventual decommissioning of a 100 MW wind generation facility consisting of 61 wind turbines and supporting facilities (Figure 1). The power would be sold to one or more regional utilities for transmission to regional consumers. The wind turbines proposed for the Project will have a capacity of 1.65 MW each with a rotor diameter of approximately 82 m (40 m blades). The turbines will be mounted on 70 m tubular towers, for a total height of approximately 111 m to the tip of the blade. Wind turbines would be grouped in turbine “strings” of about 2 to 14 turbines generally near the crest of the ridges. Turbines will be spaced approximately 150 to 250 m (500-800ft) from the next or 2-3 times the diameter of the turbine rotor. Each turbine will be connected to adjacent turbines by a 34.5-kilovolt (kV) underground collector system.

Figure 1. Proposed Horizon Kittitas Valley Wind Power Project.



The electrical output of each turbine string would be connected to the project substation by a combination of overhead and underground 34.5-kV transmission lines. The substation would be connected to the BPA and/or PSE transmission lines that are located adjacent to the substation site. The project would be monitored and controlled from an operations and maintenance (O&M) building located adjacent to the substation (Figure 1). Existing roads would be improved, and some new graveled roads would be constructed to provide access to the wind turbine locations during construction and for O&M. Wind speeds will be monitored using three permanent meteorological (met) towers.

Total acres of impacted habitat will be relatively small. Approximately 77 acres (31 ha) will be permanently disturbed (occupied by roads, turbines and other infrastructure) and approximately 302 acres (122 ha) will be temporarily disturbed during construction. Approximately 12 miles (19 km) of new roads and driveway will be constructed, and approximately 10 miles (16 km) of existing roads will be graveled and widened to 20 ft (6 m).

Once constructed, there will be a permanent staff of O&M personnel responsible for upkeep of the wind plant. Approximately 15 wind smiths will be on site on a daily basis and there will be periodic traffic on the roads associated with O&M activity. The primary O&M building will be located near the substations in approximately the center of the wind plant (Figure 1).

3.0 PROJECT AREA

The Project is located in Kittitas County, Washington, approximately 9 miles (14 km) southeast of the town of Cle Elum, and 12 miles (20 km) northwest of the town of Ellensburg. The Yakima River flows in a southeasterly direction to the south of the Project. U.S. Highway 97 runs north-south through the middle of the project area, and State Highway 10 and Interstate 90 parallel the Yakima River to the south. The project is located in the following sections: Township 19N, Range 17E, Sections 2-3, 9-11, 14-16, 21-22, and 27 (Figure 1).

The Project is located at the western edge of the Columbia Basin physiographic province at the eastern base of the Cascade Mountain range (Franklin and Dyrness 1988). The Project extends over an approximately three by four mile (5x8 km) block of land, which consists primarily of long north-south trending upland ridges. Between the ridges are ephemeral drainages of Dry Creek and associated tributaries that flow into the Yakima River to the south. Slopes within the project area generally range from 5° to 20°, but can reach 40° in the canyons. Elevations in the project area range from approximately 2,200 ft (670 m) above mean sea level along Highway 97, to approximately 3,150 ft (960 m) near the northernmost turbine string (see Figure 1).

A detailed survey for rare plants and habitat was conducted in spring and summer (April - August) 2002 and additional results and discussions of vegetation in the project are included in Eagle Cap and CH2MHILL (2002). The Project area is near the western edge of the big sagebrush/bluebunch wheatgrass zone as defined by Franklin and Dyrness (1988). In addition to big sagebrush (*Artemisia tridentata*), a number of other shrub species may be present in the zone including: rabbitbrushes (*Chrysothamnus* spp. and *Ericameria* spp.), threetip sagebrush (*Artemisia tripartita*), and spiny hopsage (*Grayia spinosa*). The bluebunch wheatgrass is

supplemented by variable amounts of grasses and forbs such as needle-and-thread grass (*Hesperostipa comata*), Thurber's needlegrass (*Achnatherum thurberianum*), Cusick's bludegrass (*Poa cusickii*), bottlebrush (*Elymus elymoides*), Sandberg's bluegrass (*Poa secunda*), cheatgrass (*Bromus tectorum*), and flatspine stickseed (*Lappula occidentalis*).

Within the Project area, many of the plant communities have been impacted and modified due to numerous factors, such as cattle grazing, introduction of exotic plant species, ground disturbance from development activities, past fires, transmission lines, roads and highways, and rural housing. Much of the riparian vegetation has been removed and degraded from heavy cattle use.

The lands within the Project area are privately owned. Livestock production (cattle grazing) is a primary land use, although some rural home development has also taken place and many of the adjoining sections have been subdivided. The area is also used, on a much more limited basis, for recreational activities such as hunting. A high-voltage transmission line corridor crosses on a roughly east-west line through the middle of the Project area (Figure 1). This corridor contains four steel-tower 230 kV electrical transmission lines. Additionally, there is a wood-pole 230kV transmission line that roughly parallels the four-line corridor, and a steel-tower 345 kV line running north of the Project area.

4.0 SPECIES LISTS AND EFFECTS

During the environmental impact analysis, the USFWS provided a species list of endangered, threatened, proposed, and candidate species potentially occurring in the Project area (Appendix A). One formerly threatened species, bald eagle (*Haliaeetus leucocephalus*), was removed from the list of threatened species April 9, 2007 (USFWS 2007) and is not considered further in this BA. The remaining species on the list include gray wolf (*Canis lupus*), endangered; bull trout (*Salvelinus confluentus*), threatened; northern spotted owl, (*Strix occidentalis caurina*), threatened; Ute ladies'-tresses orchid (*Spiranthes diluvialis*), threatened; western sage grouse (*Centrocercus urophasianus phaios*), candidate; and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), candidate. Based on the USFWS these species may be present near the site of the Project. The USFWS indicated that no designated critical habitat for listed species was present on or near the Project.

This BA addresses potential impacts from the Project to these species. Prior to initiation of any construction, the species list will be confirmed and the biological assessment may be revised (or amended) if: (1) the scope of work changes significantly so as to create potential effects to listed species not previously considered; (2) new information or research reveals effects of the proposed Project may impact listed species in a manner not considered in this BA; and (3) a new species is listed or critical habitat designated that may be affected by the Project.

4.1 Threatened and Endangered Species

For the species identified, the Project should have “no effect” on the species or its critical habitat. Resource information indicated that gray wolf, bull trout, northern spotted owl, and Ute ladies'-tresses orchid are not likely to occur or only accidentally occur in the Project area and that essential habitat for some of these species is lacking within the Project area.

Gray Wolf

Gray wolf is an endangered species throughout the lower 48 states, except in Minnesota where it is listed as threatened. The primary threats to wolves are loss of habitat and illegal killing by humans (poaching, poisoning). Historically, gray wolves occurred throughout North America from the arctic to the southern US and northern Mexico, and inhabited a wide range of habitats including coniferous forests, grasslands, arctic tundra, and deserts. The availability of prey (ungulates) is one of the limiting factors for good wolf habitat (Carbyn 1987). Additionally, large wilderness tracts with little human disturbance are believed essential to maintaining healthy wolf populations. Currently, gray wolves are still fairly abundant in Canada and Alaska, and there are also native populations in northern Minnesota, Michigan, Wisconsin, and northern Montana (USFWS 2000b). Due to the reintroduction efforts of the USFWS, gray wolves also occur in Idaho, Wyoming, and southern Montana. There are no known wolf packs in Washington, however individual wolves are occasionally reported which are believed to be lone wolves from Canada or Idaho or released wolf-dog hybrids (WDFW 1999). There are several historical records of wolves in the mountains west and north of the Project area in the PHS database (WDFW PHS 2002), the latest of which occurred in 1993. Due to the successful wolf reintroduction effort in Central Idaho, wolves may eventually disperse in to southeastern Washington. Wolves generally hunt and live in packs that usually remain within a specific territory that may range in size from 50 to 1,000 square miles depending on prey availability and seasonal movements. Wolves may travel up to 30 miles a day while hunting and lone wolves have been known to disperse up to 500 miles (USFWS 1998a). Wolves usually prey on large ungulates such as moose, elk, bison, or deer, but will also prey on smaller animals such as rodents, beaver, domestic animals, or carrion (Tucker *et al.* 1990). Habitat throughout the northern Cascade Range and in extreme northeastern Washington is considered suitable for wolves (WCFWRU 1999). No wolves were observed during field surveys in the Project area (Erickson *et al.* 2003) and they are not expected to occur in the Project area due to the heavy human influence, lack of large tracts of suitable habitat, and uncertain population status in Washington. **Implementation of the proposed Project will have “no effect” on gray wolves.**

Bull Trout

Bull trout historically occurred in major river drainages throughout the Pacific Northwest. They were listed as threatened for the Klamath River and the Columbia River distinct population segments in June 1998 (USFWS 1998b). The decline of bull trout is primarily due to habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, past fisheries management practices, and the introduction of non-native species. It is estimated that bull trout presently occur in 45% of the historical range (Quigley and Arbelbide 1997). Bull trout exhibit resident and migratory life-history strategies through much of the current range (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary or nearby streams in which they spawn and rear. Migratory bull trout spawn in tributary streams where juvenile fish rear from one to four years before migrating to either a lake (adfluvial), river (fluvial), or in certain coastal areas, to saltwater (anadromous), where maturity is reached (Fraley and Shepard 1989; Goetz 1989). Bull trout have specific habitat requirements and appear to be more bottom-oriented than other salmonids (Rieman and McIntyre 1993). Habitat components that influence bull trout distribution and abundance include cold water temperatures; instream cover such as large woody debris, undercut banks, boulders, and pools; clean loose substrate

gravel for spawning and rearing; and unobstructed migratory corridors (Fraley and Shepard 1989; Goetz 1989; Rieman and McIntyre 1993; Watson and Hillman 1997). The nearest known bull trout inhabited streams to the Project area are the Yakima and Teanaway Rivers (WDFW PHS 2002). The Project is not likely to affect bull trout due to lack of suitable stream habitat in the Project area and the unlikely probability that the Project will affect streams and other aquatic habitats. **Implementation of the Project will have “no effect” on bull trout.**

Northern Spotted Owl

Northern spotted owls historically occurred throughout the Pacific Northwest from central California north into southern British Columbia (USFWS 1990). The primary reason for decline of northern spotted owls is habitat loss, degradation and fragmentation due primarily to old growth timber harvest (USFWS 1990). In Washington, spotted owls are found throughout the low and moderate elevation coniferous forests of the Cascade Mountain range and the Olympic peninsula (Smith *et al.* 1997). Northern spotted owls generally require extensive tracts of coniferous forest, usually spruce/cedar/hemlock or Douglas-fir, for nesting and for juvenile dispersal. They nest almost exclusively in mature coniferous forest tracts greater than 1,200 acres (486 ha) in size with dense canopy cover (Gutierrez *et al.* 1995). Spotted owls are territorial and non-migratory and may occupy territories up to 22 square miles (58 km²) (Gutierrez *et al.* 1995). Spotted owl habitat consists of four components: nesting, roosting, foraging, and dispersal (AFWO 2001). Nesting and roosting habitat consists of dense mature coniferous forest with multiple canopy layers and an abundance of large trees. Spotted owls will forage within nesting habitat but they will also utilize more open and fragmented forests for foraging depending on the characteristics of their home range (AFWO 2001). Dispersal habitat consists of forest stands with adequate tree size and canopy coverage to provide protection from other bird predators (e.g., great horned owl) while the owl travels and forages. Dispersal habitat may not provide good characteristics for nesting, roosting, or foraging. The WDFW PHS database maintains records of spotted owl site centers and management circles for the state of Washington. A site center is a spotted owl location and the management circle is the area encompassed by a 1.8-mile (2.9-km) radius circle around the site center, which effectively plots spotted owl territories. Site centers are ranked based on the observation of the spotted owls within the circle, (e.g., a single owl, two or more owls detected, established pair, and documented reproduction). Based on the WDFW PHS database there are northern spotted owl management circles throughout the forests north of the Project. The two northernmost turbine locations (see Figure 1) are located approximately 0.5 mile (0.8 kilometers; km) and 1.1 miles (1.7 km), respectively, south of spotted owl management circles in the Wenatchee National Forest. Development of the Project will not directly affect these management circles. In addition, the Project, which is located in open steppe habitats, will not affect any suitable spotted owl habitat and no spotted owls were observed during field surveys of the Project area (Erickson *et al.* 2003). The potential for the Project to affect spotted owls would be based on the accidental occurrence of spotted owls in the steppe habitats of the Project. **Implementation of the proposed Project will have “no effect” on northern spotted owls.**

Ute Ladies'-Tresses Orchid

Ute ladies'-tresses orchid is a perennial orchid that occurs in wetlands. Ute ladies'-tresses orchid was listed as a threatened species in 1992 (USFWS 1992). The primary threats to the species are a general lack of knowledge about the species ecology and distribution, habitat loss or

degradation, and invasion of exotic species (USFWS 1995a). Very little is known about the historic distribution of this plant. It was previously thought to only have occurred in Nevada, Utah, and Colorado. However, since the early 1990's new populations have been discovered in Wyoming, Nebraska, Montana, Idaho, and Washington. Because potential habitat for Ute ladies'-tresses orchid is fairly common through the Intermountain, Rocky Mountain west, and western plains it potentially occurs in many unknown locations throughout the region (USFWS 1995a). In Washington, Ute ladies'-tresses orchid is known to occur in north-central Washington in Okanogan and Chelan Counties (WNHP 1999). Ute ladies'-tresses orchid have not been studied in great detail but they are believed to have similar life history traits as other orchids. Other species of *Spiranthes* live initially as saprophytic underground plants that may persist for several years before leaves emerge above ground (USFWS 1995a). Ute ladies'-tresses orchid flowers in late July through August, and occasionally into September and October if conditions are favorable (USFWS 1992). However, it is believed that individual plants rarely flower in consecutive years or under unfavorable conditions, and populations of Ute ladies'-tresses orchid are known to fluctuate from year to year, possibly depending on site conditions such as water availability, disturbance history, or encroachment by invasive weeds (USFWS 1995a). This orchid has a close affinity with floodplain areas where the water table is near the surface during the growing season providing continuous sub-irrigation and where the vegetation is relatively open and not overly dense (USFWS 1995a). Ute ladies'-tresses orchid tolerates areas with some disturbance such as flooding, grazing, or haying to reduce overstory cover from competing plants (USFWS 1995a). The project is not likely to affect Ute ladies'-tresses orchid due to lack of suitable habitat in the project area and the unlikely probability that the project will affect wetlands. No Ute ladies'-tresses orchids were found during rare plant surveys of the project area (Eagle Cap Consulting 2002). **Implementation of the Project will have "no effect" on Ute ladies'-tresses orchid.**

4.2 Proposed and Candidate Species

Proposed species are those for which the USFWS has formally proposed to list as threatened or endangered. Once proposed, there is typically a status review period (often 12 months) where the USFWS reviews all existing information, data, and threats to the species and makes a listing decision. Species proposed for listing receive protection under the ESA in that proposed projects can not jeopardize the continued existence of these species. According to the USFWS letter, there are no species proposed for listing that may be present in the project area. Construction, maintenance, and operation of the proposed Kittitas Valley Wind Power Project will not jeopardize any species on the proposed species list.

The USFWS maintains a list of candidate species for listing as threatened or endangered. Candidate species are those for which the USFWS has sufficient information on their status and threats to propose them as endangered or threatened, but for which proposed listing is precluded by other higher priority species or actions (USFWS 2000a). While candidate species receive no protection under the ESA, the USFWS encourages actions that conserve these species. Based on the USFWS, two candidate species, western sage grouse and western yellow-billed cuckoo, may be present near the Project area.

Western Sage Grouse

Western sage grouse is a subspecies of sage grouse that historically occurred from southern British Columbia south through Washington. In Washington, sage grouse historically occurred in most counties east of the Cascades but now only occur in two locations: Douglas County and extreme northern Grant County; and southeastern Kittitas County and northern Yakima County. There are other scattered records from Lincoln County and Benton County but no confirmed breeding in these locations (Smith *et al.* 1997). Sage grouse are found in areas with extensive tracts of native sagebrush steppe habitat that consists primarily of sagebrush/bunchgrass stands with medium to high sagebrush canopy cover (Hays *et al.* 1998). The Project is located in a foothills setting of the Cascade Mountains and the primary habitats are shrub-steppe and grassland steppe with scattered areas of lithosol, conifer, agriculture, pasture, and riparian habitats. According to the Washington State Gap Analysis Project (GAP)¹, the Project area falls outside mapped and modeled habitat for sage grouse in Washington (Smith *et al.* 1997; WCFWRU 1999). No sage grouse were observed during field surveys in the Project area and they are not expected to occur in the vicinity of the Project (Erickson *et al.* 2003). **Implementation of the proposed Project will have “no effect” on western sage grouse.**

Western Yellow-Billed Cuckoo

Yellow-billed cuckoos are found throughout North America from southern Canada into central and eastern Mexico. It is commonly thought that there are two separate subspecies, eastern and western, separated generally by the Rocky Mountains. Western yellow-billed cuckoo is considered a Distinct Population Segment under USFWS policy (USFWS 2001). Yellow-billed cuckoos are migratory and spend the winter as far south as South America and generally occupy the breeding grounds from May through September. Western yellow-billed cuckoos are insectivorous and breed primarily in large riparian areas, particularly cottonwood and willow riparian habitats along large rivers (USFWS 2001). According to the Washington breeding bird atlas, yellow-billed cuckoo is believed to have been extirpated as a breeder in Washington (Smith *et al.* 1997). The Project is located in a foothills setting of the Cascade Mountains and the primary habitats are shrub-steppe and grassland steppe with scattered areas of lithosol conifer, agriculture, pasture, and minimal riparian habitats. The riparian habitat in the Project area is mainly associated with Swauk and Dry Creek. As most of the development will occur on the ridge tops, little to no riparian habitat will be affected by the Project. Based on current knowledge of western yellow-billed cuckoos in Washington and their habitat use, they are not expected to occur in the Project area and habitat suitable for their occurrence will not be affected. No cuckoos were observed during field surveys in the Project area (Erickson *et al.* 2003). **Implementation of the proposed Project will have “no effect” on western yellow-billed cuckoo.**

4.3 Critical Habitat

Critical habitat for threatened or endangered species is defined by the Endangered Species Act as the specific area(s) within the geographical range of a species where physical or biological

¹ The Washington State Gap Analysis Project is based on a two primary data sources: vegetation types (actual vegetation, vegetation zone, and ecoregion) and species distribution. The two data sources are combined to map the predicted distribution of vertebrate species. More information about the Washington Gap Analysis Project can be found on the WDFW web page: www.wa.gov/wdfw/wlm/gap/dataprod.htm

features are found that are essential to the conservation of the species and which may require special management consideration or protection. Critical habitat is specific geographic area(s) designated by the USFWS for a particular species. Under the ESA, it is unlawful to adversely modify designated critical habitat. **According to the USFWS letter, there is no critical habitat as defined by the ESA for threatened or endangered species that may be affected by the Project. Implementation of the proposed Project will have “no effect” on critical habitat for endangered or threatened species.**

4.4 Cumulative Impacts

Cumulative impacts under the ESA are effects of future non-federal actions/activities that are reasonably certain to occur in the foreseeable future. These types of actions include:

- population growth, particularly in Ellensburg and the Kittitas Valley,
- new housing developments and subdivisions,
- increased infrastructure to accommodate population growth,
- increased utilities/pipelines due to increased development,
- increased gravel/materials mining to accommodate development and roads,
- increased energy development including other wind plants,
- logging of state and private forests,
- future agriculture practices on private land including livestock grazing.

The proposed Project is not expected to contribute to population growth and associated development activities such as new housing, but is designed to accommodate future power needs associated with population growth and development. The Ellensburg area and Kittitas County are undergoing substantial growth in population. A number of scattered rural residential home sites have been established in the foothills and surrounding areas including areas immediately within and adjacent to the Project. These developments have the effect of reducing open space, forests, and rangeland and activities associated with those landscapes such as logging and livestock production. In addition, due to the windy nature of the area, additional wind power projects may be proposed for the County and Kittitas Valley. Further development may contribute cumulative effects to sensitive species by creating more disturbances, reducing foraging and secluded sheltering opportunities, and creating collision hazards.

Other cumulative impacts associated with increased development, such as increased infrastructure, increased human presence and disturbance, and reductions in the historic land uses, may also affect sensitive species simply by using more space that could be utilized by sensitive species and creating more disturbances. Future non-federal activities listed above would be expected to affect sensitive species, especially as they allow more human use of areas occupied by these species. Additional use of open and secluded spaces by humans would be expected to cause some habitat degradation or limit use by sensitive species as they avoid humans. Also, more human activity in the area will lead to more disturbance, displacement, and contribute to other environmental impacts, for example, water quality degradation.

The project is not expected to affect any of the listed species identified and is not expected to contribute to cumulative impacts on these species. The project once completed, is likely to contribute to the preservation of open space by limiting other non-federal actions such as

housing and infrastructure development in the project area. This would effectively prevent other longterm cumulative effects from development of the project area.

4.5 Conservation Measures

Three areas - Construction/Operations, Project Modifications, and Resources Stewardship - provided specific opportunities for positive enhancements of the project plan that will minimize and avoid environmental consequences.

Construction/Operations

The following measures have been incorporated into the Project construction and operation to minimize potential effects on wildlife and other natural resources. The measures may indirectly benefit sensitive species by minimizing the effects of the project in general:

- minimize construction activity that will occur during the breeding season;
- maintain best management practices within the construction zones to minimize adjacent habitat disturbance;
- establish and enforce reasonable driving speed in the Project to minimize potential for wildlife roadkills;
- Provide adequate on-site waste disposal;
- adhere to the NPDES permit stipulations, including erosion control measures;
- reclaim disturbed areas as soon as practical following construction;
- establish and adhere to a fire prevention plan for the construction zone.

Project Modifications & Additions

The following measures will be employed to minimize potential long-term (operational) effects from the Project:

- install bird flight diverters on all guy wires associated with met towers;
- install raptor perch guards on all power poles constructed for the wind plant.

Resource Stewardship

In addition to measures described above, Horizon proposes two site specific actions that reflect the Horizon commitment to local endangered species, migratory birds, and general wildlife populations. The first initiative is to purchase, protect, and conserve, for the life of the Project, a privately-owned parcel of land approximately 500 acres (202 ha) in size [Sections 22 and 27, Township 19 North, Range 17 East] which is adjacent to land owned by the Washington DNR. This parcel is currently one of the areas grazed by cattle within the Project and is under immediate threat of development and conversion to rural residential development. The second, Horizon initiative will include measures to enhance the value of the native habitat on the conserved parcel through weed control and by excluding livestock. The location of this parcel is immediately adjacent to the southern extent of the proposed wind power project.

5.0 DETERMINATION

Under the ESA, actions are classified as those that may affect or have no effect on listed species. Typically the potential for effects is evaluated through a biological assessment or other impact

assessment. For projects that may affect a listed species, consultation with the U.S. Fish and Wildlife Service is typically conducted to determine the likelihood of adverse effects. For those actions for which there is no effect, no further action is required. For the proposed Horizon Kittitas Valley Wind project, the impact assessment determined that the project would have no effect on any of the listed or candidate species identified by the USFWS as potentially occurring in the project area (Table 2). This Project is not likely to have an effect on endangered, threatened, or candidate species.

Table 1. Endangered, threatened, proposed, and candidate species potentially occurring in the Project area and the potential effect of the Project on these species.

Common Name	Scientific Name	Status	Potential Effects
Bull trout	<i>Salvelinus confluentus</i>	T	No effect
Gray wolf	<i>Canis lupus</i>	E	No effect
northern spotted owl	<i>Strix occidentalis caurina</i>	T	No effect
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	T	No effect
western sage grouse	<i>Centrocercus urophasianus phaios</i>	C	No effect
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	C	No effect

6.0 LITERATURE CITED

- Arcata Fish and Wildlife Office (AFWO). 2001. Species profile: Northern Spotted Owl, *Strix occidentalis caurina*. U. S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, CA
- Carbyn, L. N. 1987. Gray wolf and red wolf. Pages 358-376 in M. Novak, J. A. Baker, M. E. Obbard, and B. Malloch (eds.). Wild Furbearer Management and Conservation in North America.
- Cederholm, D. J., D. H. Johnson, R. E. Bilby, L. G. Dominguez, A. M. Garrett, W. H. Graeber, E. L. Greda, M. D. Kunze. 2002. Pacific Salmon and Wildlife - Ecological Contexts, Relationships, and Implications for Management. Pages 628-684 in Honson, D. H. and T. A. Neil. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press, Corvallis, Oregon.
- Eagle Cap Consulting, Inc. and CH2M Hill. 2002. An investigation of rare plant resources associated with the proposed Kittitas Valley wind power project (Kittitas County, Washington). Technical report prepared by Eagle Cap Consulting, Inc., Beaverton, Oregon and CH2M Hill, Portland, Oregon. August 20, 2002.
- Erickson, W., J. Jeffrey, D. Young, K. Bay, R. Good, and K. Sernka. 2003. Ecological Baseline Study for the Kittitas Valley Wind Project Summary of Results from 2002 Wildlife Surveys Final Report February 2002– November 2002. Technical Report prepared for: Zilkha Renewable Energy, Portland, OR. Prepared by: Western EcoSystems Technology, Inc., Cheyenne, WY.

- Fraley, J.J. and B.B. Shepard. 1989. Life history, ecology, and population status of bull trout (*Salvelinus confluentus*) in the Flathead Lake and River system, Montana. Northwest Science 63: 133-143. In: USFWS 1998a.
- Franklin, J.F. and C.T. Dyrness. 1988. Natural vegetation of Oregon and Washington. Oregon State University Press, Corvallis, Oregon. 452 pp
- Goetz, F. 1989. Biology of the bull trout (*Salvelinus confluentus*): a literature review. U. S. Department of Agriculture, Forest Service, Willamette National Forest, Eugene, OR. In: USFWS 1998a.
- Gutiérrez, R. J., A. B. Franklin, and W. S. Lahaye. 1995. Spotted Owl (*Strix occidentalis caurina*). In The Birds of North America, No. 506. (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Hays, D. W., M. J. Tirhi, and D. W. Stinson. 1998. Washington state status report for the sage grouse. Washington Department Fish and Wildlife, Olympia. 62 pp.
- Quigley, T. M. and S. J. Arbelbide, eds. 1997. An assessment of ecosystem components in the interior Columbia Basin and portions of the Klamath and Great Basins. Vol. III. USDA-FS, Gen. Tech. Rep. PNW-GTR-405. Pacific Northwest Research Station, Portland, OR.
- Rieman, B. E. and J. D. McIntyre. 1995. Occurrence of bull trout in naturally fragmented habitat patches of varied size. Transactions of the American Fisheries Society 124:285-296.
- Smith, M. R., P. W. Mattocks, Jr., and K. M. Cassidy. 1997. Breeding birds of Washington state location data and predicted distributions. Seattle Audubon Society Publications in Zoology No. 1. Seattle 538 pp.
- Tucker, P.A., D.L. Davis, and R.R. Ream. 1990. Wolves, identification, documentation, population monitoring and conservation considerations. National Wildlife Federation, Northern Rockies Natural Resource Center, Missoula, Montana. 28 pp.
- US Department of Interior Fish and Wildlife Service. 1990. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Northern Spotted Owl; Final Rule. Federal Register 55(123):26114-26194.
- US Fish and Wildlife Service. 1992. Endangered and Threatened Wildlife and Plants: Final Rule to List the Plant *Spiranthes diluvialis* as a Threatened Species. Fed. Reg. 57(12): 2048-2054.
- US Fish and Wildlife Service. 1995a. Recommendations and guidelines for Ute ladies'-tresses orchid (*Spiranthes diluvialis*), Recovery and fulfilling Section 7 Consultation responsibilities. U.S. Fish and Wildlife Service. 7pp + attachments.
- US Fish and Wildlife Service. 1998a. Gray Wolf, *Canis lupus*. U. S. Fish and Wildlife Service, <http://www.fws.gov> July 1998
- US Fish and Wildlife Service. 1998b. Endangered and threatened wildlife and plants; determination of threatened status for the Klamath River and Columbia River distinct population segments of bull trout. Federal Register: June 10, 1998 Vol. 63, Number 111.
- US Fish and Wildlife Service. 2000a. The Endangered Species Act and Candidate Species. US Fish

and Wildlife Service, Division of Endangered Species, Arlington, Virginia. 1p.

- US Fish and Wildlife Service. 2000b. Endangered and Threatened Wildlife and Plants; Proposal to Reclassify and Remove the Gray Wolf from the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States; Proposal to Establish Three Special Regulations for Threatened Gray Wolves; Proposed Rule. Fed. Reg. 65(135):43450-43496.
- U. S. Fish and Wildlife Service. 2001. Endangered and Threatened Wildlife and Plants; 12-month Finding for a Petition to list Yellow-Billed Cuckoo (*Coccyzus americanus*) in the Western Continental United States. Federal Register 66(143):38611-38626, July 25, 2001.
- U. S. Fish and Wildlife Service. 2007. Endangered and Threatened Wildlife and Plants; Removing the Bald Eagle in the Lower 48 States From the List of Endangered and Threatened Wildlife; Final Rule; Endangered and Threatened Wildlife and Plants; Draft Post-Delisting and Monitoring Plan for the Bald Eagle (*Haliaeetus leucocephalus*) and Proposed Information Collection; Notice. Federal Register 72(130):37345-37372, July 9, 2007.
- Washington Cooperative Fish and Wildlife Research Unit (WCFWRU). 1999. Washington GAP Analysis Project. University of Washington, Seattle, Washington .
<http://www.fish.washington.edu/naturemapping/wagap/public_html/index.html>
- Washington Department of Fish and Wildlife. 1999. Wolves in Washington: Fact Sheet, June 1999. Washington Department of Fish and Wildlife, Olympia. 2pp.
- Washington Department of Fish and Wildlife, Priority Habitats and Species (WDFW PHS). 2002. Habitat and Species Maps for Townships: T18N, R16E; T18N, R17E; T18N, R18E; T19N, R16E; T19N, R17E; T19N, R18E; T20N, R16E; T20N, R17E; and T20N, R18E.
- Washington Natural Heritage Program (WNHP). 1999. Field guide to selected rare plants of Washington. Washington Department of Natural Resources, Natural Heritage Program and U. S. Department of Interior, Bureau of Land Management.
- Watson, G. and T. W. Hillman. 1997. Factors affecting the distribution and abundance of bull trout: an investigation at hierarchical scales. North American Journal of Fisheries Management 17:237-252. *In*: USFWS 1998a.
- Young, D. P. Jr., W. P. Erickson, R. E. Good, M. D. Strickland, and J. P. Eddy. 2002. Avian and bat mortality associated with the initial phase of the Foote Creek Rim Windpower Project, Carbon County, Wyoming: November 1998 - June 2000. Technical Report prepared by WEST, Inc. for Pacificorp, Inc., SeaWest Windpower, Inc. and Bureau of Land Management.

APPENDIX A – US FISH AND WILDLIFE SERVICE LETTER



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

P. O. Box 848

Ephrata, Washington 98823

Phone: 509-754-8580 Fax: 509-754-8575

July 9, 2002

Wally Erikson
West Inc.
2003 Central Avenue
Chyenne, Wyoming 82001

JUL 15 2002

RE: Species List Request
FWS Reference: 02-SP-E0269

Thank you for your request dated June 17, 2002. The following threatened, endangered, proposed, and candidate species may be present near the proposed wind plant, Kittitas County, Washington:

KITTITAS COUNTY

LISTED

Endangered

Gray wolf (*Canis lupus*)

Threatened

Bald eagle (*Haliaeetus leucocephalus*)

Bull trout (*Salvelinus confluentus*)

Northern spotted owl (*Strix occidentalis caurina*)

Ute ladies'-tresses (*Spiranthes diluvialis*), plant

Designated

None

PROPOSED

None

CANDIDATE

Western sage grouse (*Centrocercus urophasianus phaios*)

Western yellow-billed cuckoo (*Coccyzus americanus*)

This list fulfills the requirements of the U. S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act of 1973, as amended (Act).

If there is federal agency involvement in this project (funding, authorization, or other action), the involved federal agency must meet its responsibilities under section 7 of the Endangered Species Act of 1973, as amended (Act), as outlined in Enclosure A. Enclosure A includes a discussion of the contents of a Biological Assessment (BA), which provides an analysis of the impacts of the project on listed and proposed species, and designated and proposed critical habitat. Preparation of a BA is required for all major construction projects. Even if a BA is not prepared, potential project effects on listed and proposed species should be addressed in the environmental review for this project. Federal agencies may designate, in writing, a non-federal representative to prepare a BA. However, the involved federal agency retains responsibility for the BA, its adequacy, and ultimate compliance with section 7 of the Act.

Preparation of a BA would be prudent when listed or proposed species, or designated or proposed critical habitat, occur within the project area. Should the BA determine that a listed species is likely to be affected by the project, the involved federal agency should request section 7 consultation with the U. S. Fish and Wildlife Service (Service). If a proposed species is likely to be jeopardized by the project, regulations require conferencing between the involved federal agency and the Service. If the BA concludes that the project will have no effect on any listed or proposed species, we would appreciate receiving a copy for our information.

Candidate species receive no protection under the Act, but are included for your use during planning of the project. Candidate species could be formally proposed and listed during project planning, thereby falling within the scope of section 7 of the Act. Protection provided to these species now may preclude possible listing in the future. If evaluation of the subject project indicates that it is likely to adversely impact a candidate species, we encourage you to modify the project to minimize/avoid these impacts.

If there is no federal agency involvement in your project, and you determine that it may negatively impact a listed or proposed species, you may contact us regarding the potential need for permitting your actions under section 10 of the Act.

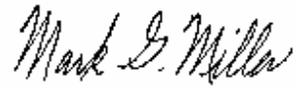
Several species of anadromous fishes that have been listed by the National Marine Fisheries Service (NMFS) may occur in the project area. Please contact NMFS in Seattle, Washington, at (206) 526-6150, in Portland, Oregon, at (503) 231-2319, or in Boise, Idaho, at (208) 378-5696 to request a list of these species.

If you would like information concerning state listed species or species of concern, you may contact the Washington Department of Fish and Wildlife, at (360) 902-2543, for fish and wildlife species; or the Washington Department of Natural Resources, at (360) 902-1667, for plant species.

This letter fulfills the requirements of the Service under section 7 of the Act. Should the project plans change significantly, or if the project is delayed more than 90 days, you should request an update to this response.

Thank you for your efforts to protect our nation's species and their habitats. If you have any questions concerning the above information, please contact Skip Stonesifer at (509) 754-8580.

Sincerely,

A handwritten signature in cursive script that reads "Mark G. Miller".

Supervisor

Enclosure

Enclosure B

**Additional Information for *Spiranthes diluvialis* - Ute Ladies'-tresses
Status: Threatened**

Spiranthes diluvialis was first described in 1984 (Sheviak 1984), and it is not yet included in many of the dichotomous keys commonly used by botanists in the northwest or Great Basin regions. It is found up to about 6,000 feet in elevation throughout much of its range in the western United States, below the lower margin of montane forests or in the transitional zone. It generally occurs in wetland and riparian areas of open shrub or grassland habitats, including springs, mesic to wet meadows, river meanders, and flood plains. This species has only recently been recorded on a few sites in central Washington, where it can occur at relatively low elevations (down to roughly 700 feet in Chelan County). It is possible that the species occurs in other appropriate wetland and riparian areas in central and eastern Washington.

Ute ladies'-tresses is a perennial, terrestrial orchid (family Orchidaceae) with stems 20 to 50 centimeters (cm) (8 to 20 inches [in]) tall, arising from tuberously thickened roots. Its narrow (0.5 to 1 cm; 0.2 to 0.4 in) leaves are about 28 cm (11 in) long at the base of the stem, and become reduced in size going up the stem. The flowers consist of 7 to 32 small (0.8 to 1.5 cm; 0.3 to 0.6 in) white or ivory flowers clustered into a spike arrangement at the top of the stem. The species is characterized by whitish, stout, ringent (gaping at the mouth) flowers. The sepals and petals, except for the lip, are rather straight, although the lateral sepals are variably oriented, often spreading abruptly from the base of the flower. Sepals are sometimes free to the base.

The non-blooming plants of Ute ladies'-tresses are very similar to those of the widespread, congeneric species *S. romanzoffiana* - hooded ladies' tresses. Usually, it is only possible to positively identify Ute ladies'-tresses when it is flowering. *S. romanzoffiana* has a tight helix of inflated ascending flowers around the spike and lateral appressed sepals. *S. diluvialis* has flowers facing directly away from the stalk, neither ascending nor nodding, and appressed or free lateral sepals (please refer to the attached drawings). Ute ladies'-tresses generally blooms from late July through September, depending on location and climatic conditions. However, in some areas, including central Washington, this species may bloom in early July or as late as early October. Bumblebees are apparently required for pollination.

Mature plants may not produce above ground shoots for one or more growing seasons, or may exhibit vegetative shoots only. Orchids generally require symbiotic associations with mycorrhizal fungi for seed germination. In addition, many plants of some *Spiranthes* species are initially saprophytic, and persist underground for several years before emerging (USFWS 1995). Therefore, it may require multiple years of surveys to document the presence or absence of Ute ladies'-tresses in a given area.

This species may be adversely affected by alterations of its habitat due to livestock grazing, vegetation removal, excavation, construction, stream channelization, and other actions that alter hydrology.

References Cited

- Sheviak, C.J. 1984. *Spiranthes diluvialis* (Orchidaceae), a new species from the western United States. *Brittonia* 36(1):8-14.
- USFWS. 1995. Ute Ladies'-tresses (*Spiranthes diluvialis*): Agency Review Draft Recovery Plan. Prepared by the U.S. Fish and Wildlife Service Ute Ladies'-tresses Recovery Team for Region 6, Denver, Colorado.

Enclosure A

**Responsibility of Federal Agencies under Section 7
of the Endangered Species Act**

Section 7(a) - Consultation/Conferencing

- Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;
- 2) Consultation with the U.S. Fish and Wildlife Service (Service) when a federal action may affect a listed species to ensure that any action authorized, funded, or carried out by a federal agency will not jeopardize the continued existence of listed species, or result in destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining that the action may affect a listed species; and
- 3) Conferencing with the Service when a federal action may jeopardize the continued existence of a proposed species, or result in destruction or adverse modification of proposed critical habitat.

Section 7(c) - Biological Assessment for Major Construction Activities

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities¹. The BA analyzes the effects of the action, including indirect effects and effects of interrelated or interdependent activities, on listed and proposed species, and designated and proposed critical habitat. The process begins with a request to the Service for a species list. If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the list should be verified with the Service. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable between the Service and the involved federal agency).

We recommend the following for inclusion in a BA: an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if listed or proposed species are present; a review of pertinent literature and scientific data to determine the species' distribution, habitat needs, and other biological requirements; interviews with experts, including those within the Service, state conservation departments, universities, and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; and an analysis of alternative actions considered. The BA should document the results of the impacts analysis, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not any listed species may be affected, proposed species may be jeopardized, or critical habitat may be adversely modified by the project. Upon completion, the

BA should be forwarded to the Service.

Major concerns that should be addressed in a BA for listed and proposed animal species include:

1. Level of use of the project area by the species, and amount or location of critical habitat;
2. Effect(s) of the project on the species' primary feeding, breeding, and sheltering areas;
3. Impacts from project construction and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to the species and/or their avoidance of the project area or critical habitat.

Major concerns that should be addressed in a BA for listed or proposed plant species include:

1. Distribution of the taxon in the project area;
2. Disturbance (e.g., trampling, collecting) of individual plants or loss of habitat; and
3. Changes in hydrology where the taxon is found.

Section 7(d) - Irreversible or Irretrievable Commitment of Resources

Requires that, after initiation or reinitiation of consultation required under section 7(a)(2), the Federal agency and any applicant shall make no irreversible or irretrievable commitment of resources with respect to the action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives which would avoid violating section 7(a)(2). This prohibition is in force during the consultation process and continues until the requirements of section 7(a)(2) are satisfied.

¹ A major construction activity is a construction project, or other undertaking having similar physical impacts, which is a major action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act [42 U.S.C. 4332 (2)(e)].