

Klondike III Wind Project: Habitat Mitigation Plan

[NOVEMBER 16, 2007]

I. Introduction

This plan describes methods and standards for enhancement of an area of land near the Klondike III Wind Project (KWP) to mitigate for the permanent impacts of the KWP on wildlife habitat.¹ The certificate holder shall enhance the mitigation site as described in this plan and shall place the site into a conservation easement for the life of the KWP facility. The objective of the enhancement methods is to improve the habitat value of the mitigation area and to protect the area for wildlife use for the life of the facility.

This plan has been prepared to guide the habitat enhancement efforts. The plan specifies monitoring procedures to evaluate enhancement success and recommended remediation if enhancement is unsuccessful in any part of the mitigation site.

II. Description of the Permanent Impacts

The KWP facility would occupy approximately 12 acres of higher-value habitat, based on a worst-case estimate. The actual area of each habitat category that the KWP will permanently occupy will depend on the final design layout of the facility after consideration of micrositing factors. The area of permanent impact includes habitat in Categories 2, 3 and 4.

Data collected at other wind energy facilities indicate that the operation of wind turbines may adversely affect the quality of nearby habitat that is important or essential for grassland avian species. Conducting a study at the KWP to determine whether operation of the facility will have a displacement effect on grassland birds would take several years. If the study concluded that an adverse impact had occurred, additional mitigation would be needed. In lieu of conducting a multi-year study, the certificate holder will provide additional mitigation, based on the assumed likelihood that operation of the KWP would reduce the quality of nearby habitat that is important or essential for grassland bird species. The affected habitat near the KWP wind turbines includes habitat in Categories 2 and 3.

As defined by the fish and wildlife habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW), the affected habitat and corresponding mitigation goals are as follows:

- **Category 2:** essential habitat for a fish or wildlife species, population, or unique assemblage of species that is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.

Mitigation Goal: no net loss of either habitat quantity or quality and provision of a net benefit of habitat quantity or quality.

¹ This plan is incorporated by reference in the site certificate for the KWP and must be understood in that context. It is not a “stand-alone” document. This plan does not contain all mitigation required of the certificate holder.

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- **Category 3:** essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

Mitigation Goal: no net loss of either habitat quantity or quality.

- **Category 4:** important habitat for fish and wildlife species.

Mitigation Goal: no net loss in either existing habitat quantity or quality.

III. Calculation of Mitigation Area

The area that is needed to mitigate for the amount of higher-value habitat occupied by KWP turbines and related facilities is determined by the “footprint” of the KWP within each habitat category. The amount of additional area needed to mitigate for a displacement effect that is uncertain cannot be precisely calculated. To determine a reasonable area for displacement mitigation, a rough calculation of potential displacement impact was done by assuming a 50-percent reduction in use by grassland birds within 50 meters of wind turbines.² It was also assumed that grassland birds use Conservation Reserve Program (CRP) land at a rate that is 50-percent of their use of native grassland and upland tree habitat (and therefore that the amount of mitigation area should be half as much for CRP displacement as for native grassland displacement). It was further assumed that the final design locations of wind turbines within the micro-siting corridors would be such that the maximum area of native grassland would be affected (the “worst case”). For both footprint and displacement impacts within Category 2 habitat, the mitigation area was calculated on a 2:1 ratio to meet the ODFW goal of a “net benefit of habitat quantity or quality.” The area of impact within each affected habitat category and the corresponding mitigation area for each category are as follows:

Category 2

Footprint impacts: 1.35 acres

Displacement impacts: 5.15 acres

Mitigation area: 6.5 acres x 2 = 13 acres

Category 3 (grassland, shrub-steppe and upland tree habitat)

Footprint impacts: 0.88 acres

Displacement impacts: 4.5 acres

Mitigation area: 5.38 acres

Category 3 (CRP)

Footprint impacts: 9.35 acres

Displacement impacts: 15.35 acres

Mitigation area: 24.7 acres

Category 4

Footprint impacts: 0.39 acres

Displacement impacts: 0.7 acres

Mitigation area: 1.09 acres

Total mitigation area (rounded): 44 acres

² The method of determining a reasonable mitigation area as described in this plan is not intended to be a precise formula or a precedent for determining appropriate mitigation for any other facility.

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1 The rough calculation of potential displacement impact described above was based in part
2 on data collected at the Stateline Wind Project and reported in the *Stateline Wind Project*
3 *Wildlife Monitoring Final Report, July 2001 - December 2003* (2003 report). Additional data
4 will be collected at Stateline in 2006 and (if any Stateline 3 turbines are built) in 2010. If analysis
5 of this additional data demonstrates a statistically significant displacement effect on grassland
6 bird species that is greater than the displacement effect described in the 2003 report, then the
7 certificate holder shall assume that the Klondike III facility is having a greater displacement
8 effect on grassland species than was assumed when the site certificate was issued and shall
9 propose additional mitigation. The Department shall recommend appropriate mitigation to the
10 Council, and the certificate holder shall implement mitigation as approved by the Council.

11 IV. Description of the Mitigation Site

12 The certificate holder shall select a 44-acre mitigation site in proximity to the facility
13 where habitat enhancement is feasible. The certificate holder shall determine the final location of
14 the mitigation area consistent with this plan in consultation with ODFW and the affected
15 landowners and subject to the approval of the Oregon Department of Energy (Department). The
16 certificate holder shall acquire the legal right to create, maintain and protect the habitat
17 mitigation area for the life of the facility by means of an outright purchase, conservation
18 easement or similar conveyance and shall provide a copy of the documentation to the
19 Department.

20 V. Habitat Enhancement Methods

21 The goal of habitat enhancement is to improve the habitat quality of the mitigation site to
22 achieve, over time, a Category 2 quality over most, if not all, of the site. The mitigation site may
23 include land that has been managed under a CRP contract, which may previously have been
24 planted with non-native species, including intermediate wheatgrass (*Agropyron intermedium*)
25 and crested wheatgrass (*Agropyron cristatum*). It is common to find non-native species such as
26 cheat grass between the planted grasses on CRP land. The goal of habitat enhancement is to
27 diversify the vegetation on the mitigation site to provide long-term, structurally mature,
28 functional grassland habitat.

29 If the selected mitigation site includes CRP land, the certificate holder will work with the
30 Farm Service Agency (FSA) and the landowner to develop habitat improvement measures for the
31 site that would benefit wildlife. The certificate holder would consult with the FSA before
32 performing any work on land under a CRP contract to ensure consistency with the intent of the
33 CRP contract.

34 Weed control on the mitigation site will contribute to lessening noxious weed expansion
35 on the site and on any nearby grassland, CRP or cultivated agricultural land and would result in
36 lessening competition to the desirable seeded and naturalized vegetation as recovery progresses.
37 The enhancement measures would proceed in phases. Before or during construction of the KWP,
38 the certificate holder shall begin the enhancement measures. The first phase is to clear non-native
39 species and weeds through a combination of spraying and mowing, followed by planting with
40 desirable grasses, forbs and woody shrubs. After the new vegetation is established, the quality of
41 the habitat will be maintained for the life of the KWP by continued weed control, fire control and
42 reseedling as necessary. The certificate holder shall repeat enhancement measures as necessary to
43 meet the success criteria. The following steps summarize the process:

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- 1) Herbicide application. Herbicides would be sprayed on existing vegetation and newly emerging weeds to prevent them from seeding and spreading. If Roundup is used instead of herbicides to prevent the build up of herbicide residue, it will be sprayed early and often (3 times) during the growing season. Alternating strips of CRP would be prepared for seeding with native-like species, and the remaining areas would be left in place to reduce the potential for wind erosion. In time, desirable plant seed sources in the new strips would infiltrate into the non-native strips to increase the overall species diversity.
- 2) Seeding and Planting. Native-like grass and forbs will be planted in the fall or early winter, so that seeds can soak up moisture during the winter. The mitigation seed mix will be determined in consultation with the landowner and ODFW. A no-till drill would be used for seeding. The no-till drill uses a series of smaller disks to create divots in the ground, and then plants the seeds in these divots with a seeding tube. The no-till drill does not require that site be tilled or disked prior to seeding. The drill would be used in several directions to mask the appearance of row crops and provide a more natural “bunchgrass” appearance over time. The certificate holder shall consult with ODFW regarding species of woody shrubs appropriate for the site. Such species could be included in the seed mix or small plants could be planted.
- 3) Continued Weed Control. After grasses have established, weed control methods would continue during first growing season and as needed thereafter (on both seeded and non-seeded strips). Weeds would be controlled with herbicides during the first year, which can reduce persistent weeds after seeding. Hand-pulling weeds can also be very effective for small areas but would be limited to noxious weeds listed by Sherman County. Spot-spraying can be used instead of total area spray to protect locations where young desirable forbs that may be growing.
- 4) Fire Control. The certificate holder will require the operations contractor to be the responsible party for wildfire suppression on the mitigation site for the life of the KWP.

VI. Monitoring

1. Monitoring Procedures

In the year following the first seeding and continuing annually thereafter until the success criteria have been met, the certificate holder shall hire a qualified investigator (an independent botanist or revegetation specialist) to examine all seeded and planted areas to assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria. The qualified investigator shall revisit the mitigation area on an annual basis until the certificate holder and the Department agree that the area is trending toward meeting the success criteria. Thereafter, the qualified investigator shall revisit the mitigation area every five years for the life of the KWP to assess vegetation cover and success. The certificate holder shall report the investigator’s findings and recommendations regarding habitat mitigation progress and success to the Department on an annual basis as part of the annual report on the KWP.

2. Success Criteria

Areas within the mitigation site are successfully revegetated when total canopy cover of all vegetation exceeds 30 percent and at least 25 percent of the ground surface is covered by desirable species. Desirable species are native species or desirable non-native species in the

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1 mitigation seed mix. Successful “enhancement” of the mitigation site means that a Category 2
2 habitat quality exists over at least 80 percent of the mitigation area.

3 After predominantly desirable vegetation has been established, the investigator shall
4 verify, during subsequent visits, that the plant communities within the mitigation site continue to
5 meet the success criteria for revegetation. In addition, the investigator, in consultation with
6 ODFW, shall evaluate the percentage of the mitigation site that has been enhanced to a Category
7 2 quality.

8 If all or part of the habitat within the site falls below the revegetation or enhancement
9 success criteria levels, the investigator shall recommend corrective measures. The Department
10 may require reseeded or other corrective measures in those areas that do not meet the success
11 criteria. The Department may exclude small areas from the reseeded requirement where the
12 potential for erosion is low and if total vegetative cover (of native and non-native species
13 together) exceeds 30 percent.

VII. Amendment of the Plan

14 This Habitat Mitigation Plan may be amended from time to time by agreement of the
15 certificate holder and the Oregon Energy Facility Siting Council (“Council”). Such amendments
16 may be made without amendment of the site certificate. The Council authorizes the Department
17 to agree to amendments to this plan. The Department shall notify the Council of all amendments,
18 and the Council retains the authority to approve, reject or modify any amendment of this plan
19 agreed to by the Department.
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