

# Leaning Juniper II Wind Project: Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

---

1 **I. Introduction**

2 This plan describes methods and standards for preservation and enhancement of an area  
3 of land near the Leaning Juniper II Wind Power Facility (LJF) to mitigate for the impacts of the  
4 facility on wildlife habitat.<sup>1</sup> This plan addresses mitigation for both the permanent impacts of  
5 facility components and the temporal impacts of facility construction. The certificate holder shall  
6 protect and enhance the mitigation area as described in this plan. This plan specifies habitat  
7 enhancement actions and monitoring procedures to evaluate the success of those actions.  
8 Remedial action may be necessary if progress toward habitat enhancement success is not  
9 demonstrated in any part of the mitigation area.

10 **II. Description of the Impacts Addressed by the Plan**

11 The estimated land area that would be occupied by permanent facility components (the  
12 “footprint”) is approximately 64 acres, based on a worst-case estimate.<sup>2</sup> In addition to the  
13 footprint impacts, construction of the facility would disturb approximately 699 acres, based on a  
14 worst-case estimate. Although much of the area is cropland, habitat affected by construction  
15 disturbance includes areas of perennial bunchgrass and desirable shrubs. After disturbance, the  
16 recovery of perennial bunchgrass species to a mature stage might take five to seven years;  
17 recovery of desirable shrubs such as bitterbrush and sagebrush might take ten to 30 years to  
18 reach maximum height and vertical branching. Even where recovery of these habitat subtypes is  
19 successful, there is a loss of habitat quality during the period of time needed to achieve recovery  
20 (temporal impact).

21 **III. Calculation of the Size of the Mitigation Area**

22 The actual footprint and construction disturbance areas cannot be determined until the  
23 final design layout of the facility is known. Before beginning construction of the facility, the  
24 certificate holder shall provide to the Oregon Department of Energy (Department) a map  
25 showing the final design configuration of the facility and a table showing the estimated areas of  
26 permanent impacts and construction area impacts on habitat (by category, habitat types and  
27 habitat subtypes). The certificate holder shall calculate the size of the mitigation area, as  
28 illustrated below, based on the final design configuration of the facility. The certificate holder  
29 shall implement the habitat enhancement actions described in this plan, after the Department has  
30 approved the size of the mitigation area. This plan does not address additional mitigation that  
31 might be required under the Leaning Juniper II Wildlife Monitoring and Mitigation Plan.

32 The mitigation area must be large enough to meet the habitat mitigation goals and  
33 standards of the Oregon Department of Fish and Wildlife (ODFW) described in OAR 635-415-  
34 0025. The ODFW goals require mitigation to achieve “no net loss” of habitat in Categories 2, 3

---

<sup>1</sup> This plan is incorporated by reference in the site certificate for the Leaning Juniper II Wind Power Facility 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.

<sup>2</sup> “Worst-case” estimates in this plan are based on revised Table P-10B (Application Supplement, Appendix B, Attachment 1) and revised Table P-15B (Application Supplement, Appendix C, Attachment 3).

## Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

1 and 4 and a “net benefit” in habitat quantity or quality for impacts to habitat in Categories 2 and  
2 5.

3 For the footprint impacts, the mitigation area includes two acres for every one acre of  
4 Category 2 habitat affected (a 2:1 ratio) and one acre for every acre of footprint impacts to  
5 Category 3, 4 and 5 habitat (a 1:1 ratio). The 2:1 ratio for Category 2 is intended to meet the  
6 ODFW goals of “no net loss” of Category 2 habitat and “net benefit” of habitat quantity for  
7 impacts to both Category 2 and Category 5 habitat. The 1:1 ratio for the footprint impacts to  
8 Category 3, 4 and 5 habitat is intended to meet the ODFW goal of “no net loss” of habitat in  
9 these categories.

10 To mitigate for construction impacts outside the footprint, the mitigation area includes ½  
11 acre for every Category 2 or 3 SSA (shrub-grass; sagebrush-rabbitbrush-snakeweed/bunchgrass-  
12 annual grass) and SSE (bitterbrush-buckwheat-bunchgrass-annual grass) habitat affected (a 0.5:1  
13 ratio). This portion of the mitigation area is intended to address the temporal loss of habitat  
14 quality during the recovery of SSA and SSE habitat disturbed during construction. The size of  
15 this portion of the mitigation area is based on the assumption that restoration of disturbed SSA  
16 and SSE habitat is successful, as determined under the Leaning Juniper II Revegetation Plan. If  
17 the revegetation success criteria are not met in the affected areas, then the Council may require  
18 the certificate holder to provide additional mitigation.

19 The area of impact within each affected habitat category and the corresponding  
20 mitigation area for each category are calculated as follows, based on worst-case estimates:

21 Category 2

22 Footprint impacts: 19.1 acres

23 Temporal impacts to SSA or SSE: 78.5 acres

24 Mitigation area:  $(19.1 \text{ acres} \times 2) + (78.5 \text{ acres} \times 0.5) = 77.5 \text{ acres}$

25 Category 3

26 Footprint impacts: 22.5 acres

27 Temporal impacts to SSA or SSE: 5.3 acres

28 Mitigation area:  $22.5 \text{ acres} + (5.3 \text{ acres} \times 0.5) = 25.1 \text{ acres}$

29 Category 4

30 Footprint impacts: 2.1 acres

31 Mitigation area: 2.1 acres

32 Category 5

33 Footprint impacts: 1.2 acres

34 Mitigation area: 1.2 acres

35 **Total mitigation area (rounded to nearest whole acre): 106 acres**

## Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

### IV. Description of the Mitigation Area

The certificate holder shall select a mitigation area in proximity to the facility where habitat protection and enhancement are feasible consistent with this plan.<sup>3</sup> The applicant identified a 440-acre parcel in a relatively remote setting where habitat protection and enhancement are feasible and sufficient land area is available to accommodate the size of the mitigation area, based on a worst-case estimate.<sup>4</sup> Before beginning construction, the certificate holder shall determine the final size and boundaries of the mitigation area in consultation with ODFW and the affected landowners and subject to the approval of the Department. The final mitigation area must contain suitable habitat to achieve the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5 through appropriate enhancement actions. Before beginning construction of the facility, the certificate holder shall acquire the legal right to create, maintain and protect the habitat mitigation area for the life of the facility by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department.<sup>5</sup>

### V. Habitat Enhancement Actions

The objectives of habitat enhancement are to protect habitat within the mitigation area from degradation and to improve the habitat quality of the mitigation area. By achieving these goals, the certificate holder can address the permanent and temporal habitat impacts of the LJF and meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. The certificate holder shall initiate the habitat enhancement actions as soon as the final design configuration of the LJF is known and the size of the mitigation area has been determined and approved by the Department. The certificate holder shall implement the following enhancement actions:

- 1) Modification of Livestock Grazing Practices. The certificate holder shall restrict grazing within the habitat mitigation area. Eliminating livestock grazing within the mitigation area during most of the year will enable recovery of native bunchgrass and sagebrush in areas where past grazing has occurred, resulting in better vegetative structure and complexity for a variety of wildlife. Reduced livestock grazing may be used as a vegetation management tool, limited to the period from February 1 through April 15.
- 2) Shrub Planting. The certificate holder shall plant sagebrush shrubs in locations where existing sagebrush is stressed. The certificate holder shall determine the size of the shrub-planting area based on the professional judgment of a qualified biologist after a ground survey of actual conditions. The size of the shrub-planting area will depend on the available mitigation area and opportunity for survival of planted shrubs. The shrub survival rate at four years after planting is an indicator of successful enhancement of

---

<sup>3</sup> OAR 635-415-0005 defines “in-proximity habitat mitigation” as follows: “habitat mitigation measures undertaken within or in proximity to areas affected by a development action. For the purposes of this policy, ‘in proximity to’ means within the same home range, or watershed (depending on the species or population being considered) whichever will have the highest likelihood of benefiting fish and wildlife populations directly affected by the development.”

<sup>4</sup> The 440-acre parcel is described in Section IV.4.(b)(F) of the Final Order on the Application.

<sup>5</sup> As used in this plan, “life of the facility” means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

## Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

1 habitat quality to Category 2. Accordingly, although a minimum 5-acre area of shrub  
2 planting is anticipated, the certificate holder may choose to plant a larger area. The  
3 certificate holder shall complete the initial sagebrush planting within one year after the  
4 beginning of construction of the LJV. Supplementing existing but disturbed sagebrush  
5 areas with sagebrush seedlings would assist the recovery of this valuable shrub-steppe  
6 component. The certificate holder shall obtain shrubs from a qualified nursery or grow  
7 shrubs from native seeds gathered from the mitigation area. The certificate holder shall  
8 identify the area to be planted with sagebrush shrubs after consultation with ODFW and  
9 subject to final approval by the Department. The certificate holder shall mark the planted  
10 sagebrush clusters at the time of planting for later monitoring purposes and shall keep a  
11 record of the number of shrubs planted.

12 3) Weed Control. The certificate holder shall implement a weed control program. Under the  
13 weed control program, the certificate holder shall monitor the mitigation area to locate  
14 weed infestations. The certificate holder shall continue weed control monitoring, as  
15 needed, for the life of the facility. As needed, the certificate holder shall use appropriate  
16 methods to control weeds. Weed control on the mitigation site will reduce the spread of  
17 noxious weeds within the habitat mitigation area and on any nearby grassland, CRP or  
18 cultivated agricultural land. Weed control will promote the growth of desirable native  
19 vegetation and planted sagebrush. The certificate holder may consider weeds to be  
20 successfully controlled when weed clusters have been eradicated or reduced to a non-  
21 competing level. Weeds may be controlled with herbicides or hand-pulling. The  
22 certificate holder shall notify the landowner of the specific chemicals to be used on the  
23 site and when spraying will occur. To protect locations where young desirable forbs may  
24 be growing, spot-spraying may be used instead of total area spraying.

25 4) Fire Control. The certificate holder shall implement a fire control plan for wildfire  
26 suppression within the mitigation area. The certificate holder shall provide a copy of the  
27 fire control plan to the Department before starting habitat enhancement actions. The  
28 certificate holder shall include in the plan appropriate fire prevention measures, methods  
29 to detect fires that occur and a protocol for fire response and suppression. The certificate  
30 holder shall maintain fire control for the life of the facility. If any part of the mitigation  
31 area is damaged by wildfire, the certificate holder shall assess the extent of the damage  
32 and implement appropriate actions to restore habitat quality in the damaged area.

33 5) Nest platforms. The certificate holder shall construct at least one artificial raptor nest  
34 platform in the mitigation area tailored to the opportunities of the site, using best  
35 professional judgment of raptor use in the general area. The certificate holder may  
36 construct more than one nest platform based on the availability of suitable locations. The  
37 certificate holder shall maintain the nest platforms for the life of the facility.

38 6) Habitat Protection. The certificate holder shall restrict uses of the mitigation area that are  
39 inconsistent with the goals of no net loss of habitat in Categories 2, 3 and 4 and a net  
40 benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5.

# Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

## VI. Monitoring

### 1. Monitoring Procedures

The certificate holder shall hire a qualified investigator (an independent botanist, wildlife biologist or revegetation specialist) to conduct a comprehensive monitoring program for the mitigation area. The purpose of this monitoring is to evaluate on an ongoing basis the protection of habitat quality, the results of enhancement actions and the use of the area by avian and mammal species, especially during the wildlife breeding season.

The investigator shall monitor the habitat mitigation area for the life of the facility beginning in the year following the initial sagebrush planting. The investigator shall visit the site as necessary to carry out the following monitoring procedures:

- 1) Annually assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria.
- 2) Annually record environmental factors (such as precipitation at the time of surveys and precipitation levels for the year).
- 3) Annually record any wildfire that occurs within the mitigation area and any remedial actions taken to restore habitat quality in the damaged area.
- 4) Annually assess the success of the weed control program and recommend remedial action, if needed.
- 5) Assess the recovery of native bunchgrass and natural recruitment of sagebrush resulting from removal of livestock grazing pressure by comparing the quality of bunchgrass and sagebrush cover at the time of each monitoring visit with the quality observed in previous monitoring visits and as observed when the mitigation area was first established. The investigator shall establish photo plots of naturally recovering sagebrush and native bunchgrass during the first year following the beginning of construction of the LJF. The investigator shall take comparison photos in the first year and in every other year thereafter until the subject vegetation has achieved mature stature. The investigator shall determine the extent of successful recovery of native bunchgrass based on measurable indicators (such as, signs of more abundant seed production) and shall report on the progress of recovery within in the monitoring plots. The investigator shall report on the timing and extent of any livestock grazing that has occurred within the mitigation area since the previous monitoring visit.
- 6) Assess the survival rate and growth of planted sagebrush. At the time of planting, sagebrush clusters will be marked for the purpose of monitoring. The investigator shall select several planted clusters for photo monitoring and shall take close-up and long-distance digital images of each selected cluster during each monitoring visit. The certificate holder shall determine the number of clusters to be photo-monitored at the time of planting, in consultation with the Department and ODFW, based on the number of clusters planted. The investigator shall take comparison photos in the first year following the initial sagebrush planting and in every other year thereafter until the surviving planted sagebrush has achieved mature stature. In each monitoring year, the investigator shall determine and report the survival rate of planted sagebrush. Based on past experience of restoration specialists for other sagebrush planting projects, a survival rate as high as 50 percent can be achieved if there are years of

## Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

1 high soil moisture, but a more typical survival rate is 2 surviving shrubs per 10  
2 planted (20 percent) after four years. Shrub-planting will be considered successful if a  
3 20-percent survival rate is achieved after four years. The investigator shall  
4 recommend remedial action when, in the investigator's judgment, the survival rate of  
5 planted sagebrush is inadequate to demonstrate a trend toward an improvement in  
6 habitat quality.

- 7 7) Between April 21 and May 21 beginning in the first spring season after the beginning  
8 of construction of the LJF, conduct an area search survey of avian species. An "area  
9 search" survey consists of recording all birds seen or heard in specific areas (for  
10 example, square or circular plots that are 5 to 10 acres in size). Area searches will be  
11 conducted during morning hours on days with low or no wind. The investigator shall  
12 determine the number searches and the number of search areas in consultation with  
13 ODFW. The investigator shall repeat the area search survey every five years during  
14 the life of the facility.
- 15 8) Beginning in the first year after the beginning of construction of the LJF and  
16 repeating every five years during the life of the facility, the investigator shall record  
17 observations of special status plant or wildlife species (federal or state threatened or  
18 endangered species and state sensitive species) during appropriate seasons for  
19 detection of these species.

20 The certificate holder shall report the investigator's findings and recommendations  
21 regarding the monitoring of the mitigation area to the Department and to ODFW on an annual  
22 basis. In the annual report, the certificate holder shall describe all habitat mitigation actions  
23 carried out during the reporting year. The report to the Department may be included as part of the  
24 annual report on the LJF.

### 25 2. Success Criteria

26 Mitigation of the permanent and temporal habitat impacts of the facility may be  
27 considered successful if the certificate holder protects and enhances sufficient habitat within the  
28 mitigation area to meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a  
29 net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. The  
30 certificate holder must protect the quantity and quality of habitat within the mitigation area for  
31 the life of the facility. ODFW has advised the Department that protection of habitat alone  
32 (without enhancement activity) will not meet the intent of the "net benefit" goal.

33 The certificate holder must protect a sufficient quantity of habitat in each category to  
34 meet the mitigation area requirements calculated under Section III. As an illustration of the  
35 requirement, the following habitat quantity goals are based on the worst-case estimate described  
36 in Section III, expressed as a percentage of the mitigation area in each habitat category:

37 **Total Mitigation Area:** 106 acres

38 **Category 2:** 77.5 acres (73 percent)

39 **Category 3:** 25.1 acres (24 percent)

40 **Category 4:** 2.1 acres (2 percent)

41 **Category 5:** 1.2 acres (1 percent)

## Leaning Juniper II Habitat Mitigation Plan

[SEPTEMBER 21, 2007]

1           The certificate holder shall determine the actual mitigation area requirements, subject to  
2 Department approval, before beginning construction of the LJF. If the land selected for the  
3 mitigation area does not already contain sufficient habitat in each category to meet these  
4 requirements, then the certificate holder must demonstrate improvement of habitat quality  
5 sufficient to change lower-value habitat to a higher value (for example, to convert Category 3  
6 habitat to Category 2). The certificate holder may demonstrate improvement of habitat quality  
7 based on evidence of indicators such as increased avian use by a diversity of species, survival of  
8 planted shrubs, more abundant seed production of desirable native bunchgrass, natural  
9 recruitment of sagebrush and successful weed control. If the certificate holder cannot  
10 demonstrate that the habitat mitigation area is trending toward the habitat quality goals described  
11 above within four years after the initial sagebrush planting, the certificate holder shall propose  
12 remedial action. The Department may require supplemental planting or other corrective  
13 measures.

14           After the certificate holder has demonstrated that the habitat quantity goals have been  
15 achieved, the investigator shall verify, during subsequent monitoring visits, that the mitigation  
16 area continues to meet the ODFW “no net loss” and “net benefit” goals described above. The  
17 investigator shall recommend remedial action if the habitat quality within the mitigation area  
18 falls below the habitat quantity goals listed above. The Department may require supplemental  
19 planting, other corrective measures and additional monitoring as necessary to ensure that the  
20 habitat quantity goals are achieved and maintained.

### 21 **VII. Amendment of the Plan**

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