

# Shepherds Flat North: Habitat Mitigation Plan

[SEPTEMBER 11, 2009]

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## I. Introduction

This plan describes methods and standards for preservation and enhancement of an area of land near Shepherds Flat North (SFN) to mitigate for the impacts of the facility on wildlife habitat.<sup>1</sup> This plan addresses mitigation for both the permanent impacts of facility components and the temporal impacts of facility construction. The certificate holder shall protect and enhance the mitigation area as described in this plan. This plan specifies habitat enhancement actions and monitoring procedures to evaluate the success of those actions. This plan does not address additional mitigation that might be required under the SFN Wildlife Monitoring and Mitigation Plan.

## II. Description of the Impacts Addressed by the Plan

The SFN footprint (area covered by permanent facility components) may occupy areas of Category 3 and Category 4 grassland, Category 5 habitat and Category 6 habitat. In compliance with Condition 86 of the site certificate, the certificate holder must avoid any permanent or temporary impact on Category 1 and 2 habitat.

## III. Calculation of the Size of the Mitigation Area

The habitat mitigation area (HMA) must be large enough to achieve, within a reasonable time, the habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW) described in OAR 635-415-0025. The ODFW goals require mitigation to achieve “no net loss” of habitat in Categories 3 and 4 (acre-for-acre mitigation). For Category 5 impacts, mitigation is achieved by a “net benefit in habitat quantity or quality.” To mitigate for Category 5 impacts, ODFW recommends that “the applicant enhance at least ½ acre of Category 3, 4, or 5 habitat” for every acre of impact on Category 5 habitat.<sup>2</sup> For Category 6, mitigation is achieved by actions that minimize direct habitat loss and avoid impacts to off-site habitat.

The actual SFN footprint and construction disturbance areas cannot be determined until the final design layout of the facility is known. Before beginning construction of the facility, the certificate holder must provide to the Oregon Department of Energy (Department) and ODFW a map showing the final design configuration of the facility and a table showing the acres of permanent impacts and construction area impacts on habitat (by category, habitat types and habitat subtypes). The certificate holder shall calculate the size of the HMA, as illustrated below, based on the final design configuration of the facility.

For the footprint impacts, the HMA must include at least one acre for every acre of footprint impacts to Category 3 and Category 4 habitat (a 1:1 ratio). To mitigate for the impact to Category 5 habitat, the HMA must include ½ acre for every acre of impact (a 0.5:1 ratio).

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<sup>1</sup> This plan is incorporated by reference in the site certificate for Shepherds Flat North 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> Email from Jon Germond, ODFW, February 26, 2008.

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1 Based on worst-case estimates, SFN would have the following footprint impacts:<sup>3</sup>

Habitat Category	Footprint Impact (acres)
Category 3	43.001
Category 4	8.683
Category 5	0 <sup>4</sup>
Category 6	1.081
Total area	52.765

2 For the purpose of illustrating the calculation of the overall size of the HMA, the area of  
3 impact within each affected habitat category and the corresponding mitigation area requirements,  
4 sample calculations are shown below, based on the worst-case estimates in the table above:

5 Category 3

6 Footprint impacts: 43.001 acres

7 Mitigation area requirement: 43.001 acres

8 Category 4

9 Footprint impacts: 8.683 acres

10 Mitigation area requirement: 8.683 acres

11 Category 5

12 Footprint impacts: 0 acres

13 Mitigation area requirement:  $0 \times 0.5 = 0$  acres of Category 3, 4 or 5 habitat<sup>5</sup>

14 **Total mitigation area (rounded to nearest whole acre): 52 acres**

15 Based on the sample calculations shown above, the size of the HMA would be 52 acres.  
16 Before beginning construction, the certificate holder shall determine the final size and  
17 boundaries of the mitigation area in consultation with ODFW and the affected landowners and  
18 subject to the approval of the Department. Before beginning construction of the facility, the  
19 certificate holder shall acquire the legal right to create, maintain and protect the HMA for the life  
20 of the facility by means of an outright purchase, conservation easement or similar conveyance  
21 and shall provide a copy of the documentation to the Department.<sup>6</sup>

#### 22 IV. Description of the Mitigation Area

23 The ODFW standards require mitigation for Category 3 impacts to be “in proximity” to  
24 SFN, and the HMA must be located where habitat protection and enhancement are feasible

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<sup>3</sup> Estimates of the area that the facility components would occupy (maximum habitat impacts) are shown in Table 8 of the *Final Order on Amendment #1* for the Shepherds Flat Wind Farm (SFWF).

<sup>4</sup> Although not included in the estimate of maximum habitat impacts for SFN, the final design configuration could affect some Category 5 habitat areas.

<sup>5</sup> ODFW has advised the Department that the Category 5 “net benefit” goal “recognizes that Category 5 habitats are generally in a ‘degraded’ state, but have high restoration potential” and that “fish and wildlife species would not benefit much from mitigation taking place on Category 5 habitat” (email from Jon Germond, ODFW, February 26, 2008).

<sup>6</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.

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1 consistent with this plan.<sup>7</sup> The applicant for the Shepherds Flat Wind Farm identified a 435-acre  
2 parcel in proximity to SFN but outside the site boundary. The baseline habitat characteristics of  
3 the 435-acre parcel are described in Section IV.4(b)(F) of the *Final Order on the Application for*  
4 *the Shepherds Flat Wind Farm* (July 25, 2008). Based on the applicant's preliminary assessment,  
5 the parcel includes 250 acres of Category 3 or better habitat, 135 acres of Category 4 habitat, 48  
6 acres of Category 5 habitat and 2 acres of Category 6 habitat. A portion of this parcel could be  
7 used as a mitigation area for SFN.

### 8 **V. Habitat Enhancement Actions**

9 The certificate holder shall implement the habitat enhancement actions described in this  
10 plan. The objectives of the plan are to protect the habitat within the HMA for the life of the  
11 facility and to enhance the baseline condition of the habitat to meet the ODFW mitigation goals.

12 To achieve "no net loss" of habitat quantity or quality to mitigate for the permanent  
13 impacts of SFN in Category 3 and 4 habitats and to achieve a "net benefit in habitat quantity or  
14 quality" to mitigate for the permanent impacts in Category 5 habitat, the certificate holder shall  
15 protect the habitat within the HMA for the life of the facility and shall implement the  
16 enhancement actions.<sup>8</sup> The certificate holder shall, without unreasonable delay, begin the  
17 enhancement actions described in this section after the final design configuration of SFN is  
18 known and the location, size and boundaries of the HMA have been determined and approved by  
19 the Department. Specific enhancement actions are described below.

- 20 1. Elimination of Livestock Grazing. The certificate holder shall install and maintain  
21 fencing, as necessary, to eliminate grazing within the habitat mitigation area.  
22 Removing livestock from the mitigation area will enable recovery of native  
23 bunchgrass and sagebrush in areas where past grazing has occurred, resulting in better  
24 vegetative structure and complexity for wildlife.
- 25 2. Weed Control and Area Seeding. The certificate holder shall implement a weed  
26 control program. Under the weed control program, the certificate holder shall monitor  
27 the mitigation area to locate weed infestations. The certificate holder shall continue  
28 weed control monitoring, as needed, for the life of the facility. As needed, the  
29 certificate holder shall use appropriate methods to control weeds. Weed control on the  
30 mitigation site will reduce the spread of noxious weeds within the habitat mitigation  
31 area and on any nearby grassland, CRP or cultivated agricultural land. Weed control  
32 will promote the growth of desirable native vegetation. Where substantial areas of  
33 soil (greater than 100 ft<sup>2</sup>) are left bare from weed control activities, the certificate  
34 holder shall hand-seed the area in the appropriate time of year with a mixture  
35 containing native grass and shrub seeds. The certificate holder may consider weeds to  
36 be successfully controlled when weed clusters have been eradicated or reduced to a

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<sup>7</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>8</sup> ODFW has advised the Department that protection of habitat alone (without enhancement activity) will not meet the intent of ODFW's Fish and Wildlife Mitigation Policy (Letter from Rose Owens, November 9, 2006, in reference to the Leaning Juniper II Wind Power Facility).

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1 non-competing level. Weeds may be controlled with herbicides or hand-pulling. The  
2 certificate holder shall notify the landowner of the specific chemicals to be used on  
3 the site and when spraying will occur. To protect locations where young desirable  
4 forbs may be growing, spot-spraying may be used instead of total area spraying.

5 3. Fire Control. The certificate holder shall implement a fire control plan for wildfire  
6 suppression within the HMA. The certificate holder shall provide a copy of the fire  
7 control plan to the Department before starting habitat enhancement actions. The  
8 certificate holder shall include in the plan appropriate fire prevention measures,  
9 methods to detect fires that occur and a protocol for fire response and suppression.  
10 The certificate holder shall maintain fire control for the life of the facility. If wildfire  
11 damages any part of the HMA during the life of the facility, the certificate holder  
12 shall assess the extent of the damage and implement appropriate actions to restore  
13 habitat quality in the damaged area.

14 4. Erosion Control. The certificate holder shall monitor the HMA to locate sites at which  
15 past livestock grazing or vegetation loss has caused soil erosion. As needed, the  
16 certificate holder shall control erosion by a combination of sediment barriers (such as  
17 hay bales, mulch or native rock) and seeding the affected area with a mixture  
18 containing native grasses and shrub seeds. The certificate holder may consider  
19 erosion control to be successful when eroded areas can support vegetation and no  
20 indications of new soil loss are evident.

21 5. Habitat Protection. For the life of the facility, the certificate holder shall restrict uses  
22 of the HMA that are inconsistent with achieving the habitat mitigation goals.

## 23 VI. Monitoring

### 24 1. Monitoring Procedures

25 The certificate holder shall hire a qualified investigator (an independent botanist, wildlife  
26 biologist or revegetation specialist) to conduct a comprehensive monitoring program for the  
27 HMA. The purpose of monitoring is to evaluate the protection of habitat quality, the results of  
28 enhancement actions and the use of the area by avian and mammal species, especially during the  
29 wildlife breeding season. The investigator shall conduct HMA monitoring beginning in the first  
30 year after enhancement actions begin and continuing for the life of the facility. The investigator  
31 shall visit the site as necessary to carry out the following monitoring procedures:

- 32 1) Annually assess the general quality of vegetation cover (species, structural stage, etc).
- 33 2) Annually assess progress toward meeting the success criteria.
- 34 3) Annually record environmental factors (such as precipitation at the time of surveys  
35 and precipitation levels for the year).
- 36 4) Annually record any wildfire that occurs within the HMA and any remedial actions  
37 taken to restore habitat quality in the damaged area.
- 38 5) Annually assess the success of the weed control (including area seeding) and erosion  
39 control programs and recommend remedial action, if needed.
- 40 6) Assess the recovery of native bunchgrass and natural recruitment of sagebrush  
41 resulting from removal of livestock grazing pressure by comparing the quality of

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1 bunchgrass and sagebrush cover at the time of each monitoring visit with the quality  
2 observed in previous monitoring visits and as observed when the HMA was first  
3 established. The investigator shall establish photo plots of naturally recovering  
4 sagebrush and native bunchgrass during the first year following the beginning of  
5 enhancement actions. The investigator shall take comparison photos in the first year  
6 and every two years thereafter until desirable vegetation has achieved mature stature.  
7 The investigator shall determine the extent of successful recovery of native  
8 bunchgrass based on measurable indicators (such as signs of more abundant seed  
9 production) and shall report on the progress of recovery within in the monitoring  
10 plots.

11 7) Between April 21 and May 21 beginning in the first spring season after the beginning  
12 of construction of SFN, conduct an area search survey of avian species. An “area  
13 search” survey consists of recording all birds seen or heard in specific areas (for  
14 example, square or circular plots that are 5 to 10 acres in size). Area searches will be  
15 conducted during morning hours on days with low or no wind. The investigator shall  
16 determine the number searches and the number of search areas in consultation with  
17 ODFW. The investigator shall repeat the area search survey every five years during  
18 the life of the facility.

19 8) Beginning in the first year after the beginning of construction of SFN and repeating  
20 every five years during the life of the facility, the investigator shall record  
21 observations of special status plant and wildlife species (federal or State threatened or  
22 endangered species and State sensitive species) during appropriate seasons for  
23 detection of these species.

### 24 **2. Reporting**

25 The certificate holder shall report the investigator’s findings and recommendations  
26 regarding the monitoring of the mitigation area to the Department and to ODFW on an annual  
27 basis. The certificate holder shall describe all habitat mitigation actions carried out during the  
28 reporting year and all additional work performed based on recommendations of the qualified  
29 investigator. The report shall include an evaluation of mitigation success, based on the success  
30 criteria described below, and a description of the methods used to perform the evaluation. The  
31 report to the Department may be included as part of the annual report on SFN that is required  
32 under Condition 21 of the site certificate.

### 33 **3. Success Criteria**

34 Mitigation of the permanent and temporal habitat impacts of the facility may be  
35 considered successful if the certificate holder protects and enhances sufficient habitat within the  
36 mitigation area to meet the ODFW goals of no net loss of habitat in Categories 3 and 4 and a “net  
37 benefit” for impacts to habitat in Category 5. The certificate holder must protect the quantity and  
38 quality of habitat within the HMA for the life of the facility. The mitigation goals are  
39 successfully achieved when the HMA contains a sufficient quantity of habitat in each category to  
40 meet the mitigation area requirements calculated under Section III. The certificate holder may  
41 count habitat of higher value toward meeting the acreage requirements for Category 3, 4 and 5  
42 habitat. The certificate holder shall determine the actual mitigation area requirements, subject to  
43 Department approval, before beginning construction of SFN.

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1           The certificate holder may demonstrate enhancement of habitat quality based on evidence  
2 of indicators such as increased avian use by a diversity of species, more abundant seed  
3 production of desirable native bunchgrass, natural recruitment of sagebrush and successful weed  
4 control.

5           If the certificate holder cannot demonstrate that the HMA is trending toward meeting the  
6 success criteria within five years after the date construction of SFN begins, the certificate holder  
7 shall propose remedial action. The Department may require supplemental planting or other  
8 corrective measures, which may include increasing the size of the HMA.

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

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