

Shepherds Flat North: Habitat Mitigation Plan

[REVISED DECEMBER 9, 2011]

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.¹ 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) occupies areas of Category 2, 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 “all Category 1 habitat and those areas of Category 2 habitat shown on the “ODFW-2” Figures 1 through 12 in the Shepherds Flat Wind Farm Application.” The final design of the facility complied with this requirement. Affected areas of Category 2 habitat had been classified as Category 3 habitat at the time of the Shepherds Flat Wind Farm application in 2007 but were reclassified as Category 2 in May 2010 during the pre-construction habitat survey. The habitat quality of these reclassified areas had improved due to the passage of time and the absence of wildfire.

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. For the footprint impacts, the mitigation area must include two acres for every one acre of Category 2 habitat affected (a 2:1 ratio) and one acre for every acre of impact to Category 3 and 4 habitat (a 1:1 ratio). The 2:1 ratio for Category 2 is intended to meet the ODFW goals of “no net loss” of Category 2 habitat and “net benefit” of habitat quantity. 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.² For Category 6, mitigation is achieved by actions that minimize direct habitat loss and avoid impacts to off-site habitat.

To address the temporal loss of habitat quality during the recovery of Category 3 shrub-steppe-sage (SS-S) habitat temporarily disturbed during construction of SFN (outside the footprint), the HMA must include ½ acre for every acre of Category 3 SS-S habitat affected (a

¹ 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.

² Email from Jon Germond, ODFW, February 26, 2008.

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1 0.5:1 ratio). If the revegetation success criteria are not met in the affected areas of temporarily
2 disturbed SS-S habitat, as determined under the SFN Revegetation Plan, then the Council may
3 require the certificate holder to provide additional mitigation.

4 Before beginning construction of the facility, the certificate holder provided to the
5 Oregon Department of Energy (Department) and ODFW maps showing the final design
6 configuration of the facility and a table showing the acres of permanent impacts and construction
7 area impacts on habitat (by category, habitat types and habitat subtypes).³

8 Based on the final design habitat assessment, SFN has had the following footprint
9 impacts:

Habitat Category	Footprint Impact (acres)
Category 2	4
Category 3	33.5
Category 4	9.5
Category 5	0.3
Category 6	0.9
Total area	48.2

10 The overall minimum size of the HMA, the area of impact within each affected habitat
11 category and the corresponding mitigation area requirements are shown below, based on the final
12 design of SFN:

13 Category 2

14 Footprint impacts: 4 acres

15 Mitigation area: (4 acres x 2) = 8 acres

16

17 Category 3

18 Footprint impacts: 33.5 acres

19 Temporal impacts to SS-S: 1.9 acres

20 Mitigation area requirement: 33.5 acres + (1.9 acres x 0.5) = 34.45 acres

21 Category 4

22 Footprint impacts: 9.5 acres

23 Mitigation area requirement: 9.5 acres

24 Category 5

25 Footprint impacts: 0.3 acres

26 Mitigation area requirement: (0.3 acres x 0.5) = 0.15 acres of Category 3, 4 or 5 habitat⁴

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

28 Before beginning construction, the certificate holder determined the final size and
29 boundaries of the mitigation area in consultation with ODFW and the affected landowners and

³ The pre-construction habitat survey is described in "SFN Disturbance.pdf" (email from Patricia Pilz, May 24, 2010).

⁴ 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).

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1 with the approval of the Department. The certificate holder acquired the legal right to create,
2 maintain and protect the HMA for the life of the facility by means of a conservation easement
3 and provided a copy of the documentation to the Department.⁵

4 **IV. Description of the Mitigation Area**

5 The ODFW standards require mitigation for Category 2 and Category 3 impacts to be “in
6 proximity” to SFN, and the HMA must be located where habitat protection and enhancement are
7 feasible consistent with this plan.⁶ The applicant for the Shepherds Flat Wind Farm identified a
8 435-acre parcel in proximity to SFN but outside the site boundary. The baseline habitat
9 characteristics of the 435-acre parcel are described in Section IV.4(b)(F) of the *Final Order on*
10 *the Application for the Shepherds Flat Wind Farm* (July 25, 2008). This parcel, however, was
11 not available to the certificate holder when construction of SFN was ready to begin. The
12 certificate holder identified a replacement parcel, and the Department approved the parcel.
13 ODFW determined that the replacement parcel was suitable for mitigation.⁷ The HMA for SFN
14 is contiguous with the HMAs for Shepherds Flat Central and Shepherds Flat South and is
15 bordered on the north by lands held by The Nature Conservancy.⁸ It is located east of Highway
16 74 north of Cecil. The HMA for SFN consists of approximately 67 acres containing grasslands,
17 sage steppe and ranch roads.⁹ There are no trees and no observed raptor nests within the HMA.
18 The terrain consists of ridges separated by ravines perpendicular to and sloping down towards
19 Willow Creek. The HMA includes approximately 32 acres of Category 2 grassland and SS-S
20 habitat and 21 acres of Category 3 grassland and SS-S habitat. The landowner has used the area
21 for cattle grazing.

22 **V. Habitat Enhancement Actions**

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

26 To achieve “no net loss” of habitat quantity or quality to mitigate for the permanent
27 impacts of SFN in Category 2, 3 and 4 habitats and to achieve a “net benefit in habitat quantity
28 or quality” to mitigate for the permanent impacts in Category 2 and 5 habitat, the certificate
29 holder shall protect the habitat within the HMA for the life of the facility and shall implement the
30 enhancement actions.¹⁰ The certificate holder began the enhancement actions described in this
31 section after the final design configuration of SFN was known and the location, size and

⁵ 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.

⁶ 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.”

⁷ Email from Steve Cherry, ODFW, May 5, 2010.

⁸ A more detailed description of the HMA, including maps and photographs, may be found in “Habitat mitigation area. pdf” (email from Patricia Pilz, May 21, 2010).

⁹ Revised acreage calculations (email from Patricia Pilz, November 4, 2011).

¹⁰ 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 boundaries of the HMA were determined and approved by the Department. Specific
2 enhancement actions are described below.
- 3 1. Modification of Livestock Grazing Practices. The certificate holder shall restrict
4 grazing within the habitat mitigation area. Limited livestock grazing in the
5 mitigation area will enable recovery of native bunchgrass and sagebrush in areas
6 where past grazing has occurred, resulting in better vegetative structure and
7 complexity for wildlife. Reduced livestock grazing may be used as a vegetation
8 management tool, limited to the period from November 15 to May 15.
 - 9 2. Weed Control and Area Seeding. The certificate holder shall implement a weed
10 control program. Under the weed control program, the certificate holder shall
11 monitor the mitigation area to locate weed infestations. The certificate holder shall
12 continue weed control monitoring, as needed, for the life of the facility. As needed,
13 the certificate holder shall use appropriate methods to control weeds. Weed control
14 on the mitigation site will reduce the spread of noxious weeds within the habitat
15 mitigation area and on any nearby grassland, CRP or cultivated agricultural land.
16 Weed control will promote the growth of desirable native vegetation. Where
17 substantial areas of soil (greater than 100 ft²) are left bare from weed control
18 activities, the certificate holder shall hand-seed the area in the appropriate time of
19 year with a mixture containing native grass and shrub seeds. The certificate holder
20 may consider weeds to be successfully controlled when weed clusters have been
21 eradicated or reduced to a non-competing level. Weeds may be controlled with
22 herbicides or hand-pulling. The certificate holder shall notify the landowner of the
23 specific chemicals to be used on the site and when spraying will occur. To protect
24 locations where young desirable forbs may be growing, spot-spraying may be used
25 instead of total area spraying.
 - 26 3. Fire Control. The certificate holder shall implement a fire control plan for wildfire
27 suppression within the HMA. The certificate holder shall provide a copy of the fire
28 control plan to the Department before starting habitat enhancement actions. The
29 certificate holder shall include in the plan appropriate fire prevention measures,
30 methods to detect fires that occur and a protocol for fire response and suppression.
31 The certificate holder shall maintain fire control for the life of the facility. If wildfire
32 damages any part of the HMA during the life of the facility, the certificate holder
33 shall assess the extent of the damage and implement appropriate actions to restore
34 habitat quality in the damaged area.
 - 35 4. Erosion Control. The certificate holder shall monitor the HMA to locate sites at
36 which past livestock grazing or vegetation loss has caused soil erosion. As needed,
37 the certificate holder shall control erosion by a combination of sediment barriers
38 (such as hay bales, mulch or native rock) and seeding the affected area with a
39 mixture containing native grasses and shrub seeds. The certificate holder may
40 consider erosion control to be successful when eroded areas can support vegetation
41 and no indications of new soil loss are evident.
 - 42 5. Habitat Protection. For the life of the facility, the certificate holder shall restrict uses
43 of the HMA that are inconsistent with achieving the habitat mitigation goals.

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- 1 6. Litter Removal. To protect wildlife from wind-blown litter, the certificate holder
2 shall monitor the Highway 74 Oregon Trail Wayside on a monthly basis and shall
3 remove litter from the wayside area and areas within the HMA.

4 **VI. Monitoring**

5 **1. Monitoring Procedures**

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

- 13 1) Annually assess the general quality of vegetation cover (species, structural stage, etc).
14 2) Annually assess progress toward meeting the success criteria.
15 3) Annually record environmental factors (such as precipitation at the time of surveys
16 and precipitation levels for the year).
17 4) Annually record any wildfire that occurs within the HMA and any remedial actions
18 taken to restore habitat quality in the damaged area.
19 5) Annually assess the success of the weed control (including area seeding) and erosion
20 control programs and recommend remedial action, if needed.
21 6) Assess the recovery of native bunchgrass and natural recruitment of sagebrush
22 resulting from removal of livestock grazing pressure by comparing the quality of
23 bunchgrass and sagebrush cover at the time of each monitoring visit with the quality
24 observed in previous monitoring visits and as observed when the HMA was first
25 established. The investigator shall establish photo plots of naturally recovering
26 sagebrush and native bunchgrass during the first year following the beginning of
27 enhancement actions. The investigator shall take comparison photos in the first year
28 and every two years thereafter until desirable vegetation has achieved mature stature.
29 The investigator shall determine the extent of successful recovery of native
30 bunchgrass based on measurable indicators (such as signs of more abundant seed
31 production) and shall report on the progress of recovery within in the monitoring
32 plots. The investigator shall report on the timing and extent of any livestock grazing
33 that has occurred within the mitigation area since the previous monitoring visit.
34 7) Between April 21 and May 21 beginning in the first spring season after the beginning
35 of construction of SFN, conduct an area search survey of avian species. An “area
36 search” survey consists of recording all birds seen or heard in specific areas (for
37 example, square or circular plots that are 5 to 10 acres in size). Area searches will be
38 conducted during morning hours on days with low or no wind. The investigator shall
39 determine the number searches and the number of search areas in consultation with
40 ODFW. The investigator shall repeat the area search survey every five years during
41 the life of the facility.

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- 1 8) Beginning in the first year after the beginning of construction of SFN and repeating
2 every five years during the life of the facility, the investigator shall record
3 observations of special status plant and wildlife species (federal or State threatened or
4 endangered species and State sensitive species) during appropriate seasons for
5 detection of these species.

6 **2. Reporting**

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

15 **3. Success Criteria**

16 Mitigation of the permanent and temporal habitat impacts of the facility may be
17 considered successful if the certificate holder protects and enhances sufficient habitat within the
18 mitigation area to meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a
19 “net benefit” for impacts to habitat in Categories 2 and 5. The certificate holder must protect the
20 quantity and quality of habitat within the HMA for the life of the facility. The mitigation goals
21 are successfully achieved when the HMA contains a sufficient quantity of habitat in each
22 category to meet the mitigation area requirements calculated under Section III. The certificate
23 holder may count habitat of higher value toward meeting the acreage requirements for Category
24 3, 4 and 5 habitat.

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

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

33 **VII. Amendment of the Plan**

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