



# Oregon

Tina Kotek, Governor



550 Capitol St. NE  
Salem, OR 97301  
Phone: 503-378-4040  
Toll Free: 1-800-221-8035  
FAX: 503-373-7806  
[www.oregon.gov/energy](http://www.oregon.gov/energy)

**To:** Oregon Energy Facility Siting Council

**From:** Sarah Esterson, Senior Policy Advisor

**Date:** August 9, 2024

**Subject:** Biglow Canyon Wind Farm – Annual Monitoring for Wildlife Monitoring and Mitigation Plan (Condition 61)

**Attachments:** Wildlife Monitoring and Mitigation Plan (May 10, 2007)  
Annual Wildlife Monitoring Report (April 2024)

---

## **Purpose**

The Oregon Department of Energy (Department) prepared this staff report for the Energy Facility Siting Council to summarize the results of ongoing wildlife monitoring and results at Leaning Juniper IIB Wind Power Facility. The Department is required to make available the actual results and allow for public comment. This staff report supports both Council and the public's understanding of the results and of their opportunity to review and comment.

## **Wildlife Monitoring and Mitigation Plan Overview**

Biglow Canyon Wind Farm is a wind energy generation facility consisting of 217 wind turbines, with a peak generating capacity of 450 megawatts (MW). The facility is in Sherman County, approximately 2.5 miles northeast of the town of Wasco. The Council issued a site certificate for the facility in 2006.

Condition 61 of the site certificate states that, "The certificate shall conduct wildlife monitoring and mitigation in accordance with the Wildlife Monitoring and Mitigation Plan (WMMP) that is incorporated in the Final Order on Amendment #2 as Attachment A and as may be amended from time to time."

The WMMP requires that the certificate holder implement short- and long-term wildlife monitoring during facility operation. Short-term wildlife monitoring requirements include a 2-year post construction Bird and Bat Fatality Monitoring Program and Avian Use and Behavior Surveys; both of these wildlife monitoring activities were completed in 2010-12. On-going long-

term wildlife monitoring requirements include:

- Long-Term Raptor Nesting Surveys (Every 5-years for operational life of facility; 2012, 2017, 2022, etc.)
- Wildlife Incident Response and Handling System (Ongoing)

### Long-Term Raptor Nesting Surveys

Raptor nesting surveys are required to be completed for the life of the facility, on a 5-year cycle. Raptor nesting surveys were completed in 2022; the next raptor nesting survey will be completed in 2027. The objectives of raptor nesting surveys are to estimate the size of local breeding populations of tree or other above ground-nesting raptor species within a 2-mile radius of the facility, and to determine whether facility operation is contributing to a reduction in nesting activity or nesting success in local populations of the Swainson’s hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*) and golden eagle (*Aquila chrysaeto*). A summary of raptor nesting survey results to date is presented in Table 1 below.

**Table 1: Long-Term Raptor Nesting Survey Results for Biglow Canyon Wind Farm**

<b>Nest Status</b>	<b>2006</b>	<b>2012</b>	<b>2017</b>	<b>2022</b>	<b>2027</b>
Located Nests	28	24	22	23	TBD
Occupied Nests	10	13	11	16	TBD
<b>Species</b>					
<b>Species</b>	<b>2006</b>	<b>2012</b>	<b>2017</b>	<b>2022</b>	<b>2027</b>
Swainson’s Hawk	3	3	3	1	TBD
Red-tailed Hawk	7	7	7	9	TBD
Great Horned Owl	0	2	1	4	TBD
Common Raven	0	1	0	1	TBD

Based on the long-term raptor nesting surveys to date, there has been an increase in the total raptor breeding populations from 2006 to 2022. In 2022, there was an increase in the number of red-tailed hawk nests (9) and a decrease in the number of Swainson’s hawk nests (one), but the overall number of hawk nests remained the same as all previous surveys.

Comparison of five-year post-construction surveys show variability in nesting success between survey years both within each species and for all species combined. In 2022, nesting success, ratio of successful to occupied nests, and number of young fledged was equal to or above the mean for golden eagles, great horned owls, red-tailed hawks, and all species combined. The single Swainson’s hawk nest was predated, and no young were produced in the survey area. All measures of productivity were below the post-construction mean for this species. This lack of productivity is at least partially the result of interactions between species including nest predation and nest site competition. Productivity data for Swainson’s hawks should be interpreted cautiously at this time due to the small sample size and incomplete data set. No statistical results were calculated, although State Sensitive Swainson’s hawk showed a 66% decrease in observed nests while generalist competitor of the Swainson’s hawk, the red-tailed hawk was up 128%. Another nest site competitor, the great horned owl increased four times from one to four nests. These observed potential trends will be tracked in upcoming surveys. The next raptor survey is scheduled for 2027.

### **Wildlife Incident Response and Handling System**

The Wildlife Incident Response and Handling System is a program for responding to and handling avian and bat injuries and fatalities found by personnel at the project site during construction and routine maintenance operations. PGE maintains an Oregon Department of Fish & Wildlife (ODFW) Scientific Take Permit (#051-20, Attachment A) and a U.S. Fish and Wildlife Service (USFWS) Migratory Bird Special Purpose Permit (#MB65566B-0) to lawfully collect and handle protected birds and bats. In May 2020, PGE received its Biglow Canyon Long-term Eagle Incidental Take Permit (ITP) (#MB63507B-2) from the USFWS. Additional surveys by a third-party contractor began onsite in August 2020 and will continue through August 2023. Consistent with permit requirements, PGE filed annual reports with USFWS for bird and bat incidents reported in 2022 at the facility. In 2022, PGE site staff also attended annual compliance training which includes bird and bat handling instruction and eagle take permit compliance requirements.

Five avian fatalities, one bird injury, and one bat fatality were reported in 2023. Two of the six reported bird events were found during third-party eagle fatality monitoring and the remaining four were found incidentally by site staff. The bat was incidentally found by site staff. The annual permit reports were electronically filed with ODFW and USFWS.

### **Public Comments on Wildlife Monitoring Results**

Section 5 of the WMMP, Data Reporting, establishes an opportunity for the public to review and comment on monitoring results. Specifically, the WMMP states, “The public will have an opportunity to receive information about monitoring results and to offer comment. Within 30 days after receiving the annual report of monitoring results, the Department will make the report available to the public on its website and will specify a time in which the public may submit comments to the Department.”

The Department received the annual monitoring results for the facility on April 30, 2024. In accordance with the terms of the WMMP, the Department provides a copy of the 2023 monitoring results for the Biglow Canyon Wind Farm to the Council for review (attached) and posted a copy to the Department’s project website at: <http://www.oregon.gov/energy/facilities-safety/facilities/Pages/BCW.aspx> and has established a 30-day timeframe to accept public comments.

Comments are due within 30-days of posting, or **September 13, 2024 at 5:00 p.m.** and may be submitted to Sarah Esterson at [sarah.esterson@energy.oregon.gov](mailto:sarah.esterson@energy.oregon.gov)

Attachments: Wildlife Monitoring and Mitigation Plan (May 10, 2007)  
Annual Wildlife Monitoring Report (2023)

**Attachment 1: Wildlife Monitoring and Mitigation Plan (May 10, 2007)**

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

---

1           This plan describes wildlife monitoring that the certificate holder shall conduct during  
2 operation of the Biglow Canyon Wind Farm (BCWF).<sup>1</sup> The monitoring objectives are to  
3 determine whether operation of the facility causes significant fatalities of birds and bats and to  
4 determine whether the facility results in a loss of habitat quality. The BCWF facility consists of  
5 up to 225 wind turbines with a maximum generating capacity of 450 MW, up to 10 permanent  
6 meteorological towers and other related or supporting facilities as described in the site certificate.  
7 The BCWF will be built in phases.

8           The certificate holder shall use experienced personnel to manage the monitoring required  
9 under this plan and properly trained personnel to conduct the monitoring, subject to approval by  
10 the Oregon Department of Energy (Department) as to professional qualifications. For all  
11 components of this plan except the Raptor Nesting Surveys and the Wildlife Incident Response  
12 and Handling System, the certificate holder shall direct a qualified independent third-party  
13 biological monitor, as approved by the Department, to perform monitoring tasks.

14           The Wildlife Monitoring and Mitigation Plan for the BCWF has the following  
15 components:

- 16           1) Fatality Monitoring Program including:
  - 17               a) Removal Trials
  - 18               b) Searcher Efficiency Trials
  - 19               c) Fatality Monitoring Search Protocol
  - 20               d) Statistical Analysis
- 21           2) Raptor Nesting Surveys
- 22           3) Avian Use and Behavior Surveys
- 23           4) Wildlife Incident Response and Handling System

24           Following is a discussion of the components of the monitoring plan, statistical analysis  
25 methods for fatality data, data reporting and potential mitigation.

26           The selection of the mitigation actions that the certificate holder may be required to  
27 implement under this plan should allow for flexibility in creating appropriate responses to  
28 monitoring results that cannot be known in advance. If the Department determines that  
29 mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the  
30 Department and shall carry out mitigation actions approved by the Department, subject to review  
31 by the Oregon Energy Facility Council (Council).

---

<sup>1</sup> This plan is incorporated by reference in the site certificate for the BCWF 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.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

**1. Fatality Monitoring**

(a) Definitions and Methods

Seasons

This plan uses the following dates for defining seasons:

<b>Season</b>	<b>Dates</b>
Spring Migration	March 16 to May 15
Summer/Breeding	May 16 to August 15
Fall Migration	August 16 to October 31
Winter	November 1 to March 15

Search Plots

The certificate holder shall conduct fatality monitoring within search plots. The certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW), shall select search plots based on the following sampling scheme, consistent with the sample size requirements for that phase of the facility, as outlined below: On each of the nine turbine strings that extend toward the John Day River, the certificate holder shall include in search plots the two turbines closest to the river for each phase in which these turbines are built. In addition, the certificate holder shall include, for each phase, representative turbines distributed throughout the site, consistent with the sample size described below. Each search plot will contain one turbine. Search plots will be square or circular. Circular search plots will be centered on the turbine location and will have a radius equal to the maximum blade tip height of the turbine contained within the plot. "Maximum blade tip height" is the turbine hub-height plus one-half the rotor diameter. Square search plots will be of sufficient size to contain a circular search plot as described above.

The certificate holder shall provide maps of the search plots to the Department and ODFW before beginning fatality monitoring at the facility. The certificate holder will use the same search plots for each search conducted during each monitoring year. During the second monitoring year, the same end-of-row turbines nearest the John Day River will be sampled, but the other search plots will be selected from the turbines not sampled during the first monitoring year.

Sample Size

The sample size for fatality monitoring is the number of turbines searched per monitoring year. The facility will be built in phases. For the first phase of development (in which 76 turbines will be built), the certificate holder shall conduct fatality monitoring during the first two monitoring years in search plots that include 50 turbines.

The sample size for future phases of the facility, if they are built, will include search plots for a minimum of 40 percent of the wind turbines in that phase but not fewer than 50 turbines, unless the entire phase is fewer than 50 turbines, in which event all turbines will be sampled. The sample size might be larger if, under Section 1(g) of this plan, mitigation is required based on the results of fatality monitoring of the first phase.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1           If no mitigation is required under Section 1(g) of this plan based on the results of fatality  
2 monitoring of the first phase, then the sample size for monitoring future phases of the facility  
3 may be reduced appropriately if the Department concurs.

4           If mitigation is required under Section 1(g) of this plan based on the results of fatality  
5 monitoring of the first phase, then the certificate holder shall propose an appropriate sample size  
6 for monitoring the next phase of the facility. The need for, and scope of, fatality monitoring for  
7 subsequent phases are subject to the approval of the Department.

8           *Scheduling and Sampling Frequency*

9           Fatality monitoring will begin upon the commencement of commercial operation of the  
10 facility. Fatality monitoring for each subsequent phase will begin upon commercial operation of  
11 that phase.

12           For each phase, the first fatality monitoring year will commence on the first day of the  
13 month following the commercial operation date of that phase of the facility and will conclude  
14 twelve months later (for example, if commercial operation begins in October of 2007, the  
15 monitoring year will commence on November 1, 2007, and conclude on October 31, 2008).  
16 Subsequent monitoring years of that phase will follow the same schedule (for example, the  
17 second monitoring year would begin November 1, 2008) unless the second fatality-monitoring  
18 year is postponed with the concurrence of the Department.

19           In each monitoring year, the certificate holder shall conduct fatality-monitoring searches  
20 at the rates of frequency shown below. Over the course of one monitoring year, the certificate  
21 holder would conduct 16 searches<sup>2</sup>, as follows:

<b>Season</b>	<b>Frequency</b>
Spring Migration	2 searches per month (4 searches)
Summer/Breeding	1 search per month (3 searches)
Fall Migration	2 searches per month (5 searches)
Winter	1 search per month (4 searches)

22           *Duration of Fatality Monitoring*

23           Fatality monitoring of the first phase of the facility will be complete after two monitoring  
24 years, except as follows: A worst-case analysis will be used to resolve any uncertainty in the  
25 results of the two years of monitoring data for purposes of determining the mitigation  
26 requirements for the facility. If the first two years of monitoring data indicate the potential for  
27 unexpected impacts of a type that cannot be resolved appropriately by worst-case analysis and  
28 appropriate mitigation, additional, targeted monitoring may be conducted for the first phase of  
29 the facility for up to an additional two years before determining the mitigation requirements for  
30 the facility, or, alternatively, sample sizes larger than those outlined above will be used in  
31 monitoring of subsequent phases of development of the facility.

32           *Meteorological Towers*

33           The facility will most likely use non-guyed meteorological towers. Non-guyed towers are  
34 known to cause little if any bird and bat mortality. Therefore, monitoring will not occur at non-

---

<sup>2</sup> Fewer than 16 searches may be conducted if searches are not possible due to safety reasons or severe weather.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 guyed meteorological towers. If the meteorological towers are guyed, the certificate holder shall  
2 search all towers on the same monitoring schedule as fatality monitoring. The certificate holder  
3 will use circular search plots. The radius of the circular search plots will extend a minimum of 5  
4 meters beyond the most distant guy wire anchor point.

5 (b) Removal Trials

6 The objective of the removal trials is to estimate the length of time avian and bat  
7 carcasses remain in the search area. Carcass removal studies will be conducted during each  
8 season in the vicinity of the search plots. Estimates of carcass removal rates will be used to  
9 adjust carcass counts for removal bias. "Carcass removal" is the disappearance of a carcass from  
10 the search area due to predation, scavenging or other means such as farming activity. Removal  
11 rates will be estimated by size class, habitat and season.

12 During the first phase, the certificate holder shall conduct carcass removal trials within  
13 each of the seasons defined above during the years in which fatality monitoring occurs. During  
14 the first year in which fatality monitoring occurs, trials will occur in at least eight different  
15 calendar weeks in a year, with at least one calendar week between starting dates. Trials will be  
16 spread throughout the year to incorporate the effects of varying weather, farming practices and  
17 scavenger densities. At least two trials will be started in each season. Each trial will use at least  
18 20 carcasses. For each trial, at least 5 small bird carcasses and at least 5 large bird carcasses will  
19 be distributed in cultivated agriculture habitat and at least 3 small bird carcasses and at least 3  
20 large bird carcasses will be distributed in non-cultivated habitat (grassland/shrub-steppe and  
21 CRP). In a year, about 100 carcasses will be placed in cultivated agriculture and about 60 in non-  
22 cultivated grassland/shrub-steppe and CRP for a total of about 160 trial carcasses. The number of  
23 removal trials may be reduced to one per season (80 trial carcasses) during the second year of  
24 fatality monitoring, subject to approval by the Department, if the certificate holder can  
25 demonstrate that the calculation of fatality rates will continue to have statistical validity with the  
26 reduced sample size.

27 The need for, and scope of, removal trials for subsequent phases may be modified based  
28 on the variability of results of removal trials for the first phase, subject to the approval of the  
29 Department.

30 The "small bird" size class will use carcasses of house sparrows, starlings, commercially  
31 available game bird chicks or legally obtained native birds to simulate passerines. The "large  
32 bird" size class will use carcasses of raptors provided by agencies, commercially available adult  
33 game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If  
34 fresh bat carcasses are available, they may also be used.

35 To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in  
36 fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots  
37 but not so near as to attract scavengers to the search plots. The planted carcasses will be located  
38 randomly within the carcass removal trial plots.

39 Carcasses will be placed in a variety of postures to simulate a range of conditions. For  
40 example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2)  
41 hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) and, 3) partially  
42 hidden. Trial carcasses will be marked discreetly for recognition by searchers and other  
43 personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.



**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1           It is expected that carcasses will be checked as follows, although actual intervals may  
2 vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be  
3 checked about every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30  
4 and day 40. This schedule may vary depending on weather and coordination with the other  
5 survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be  
6 removed.

7 (c) Searcher Efficiency Trials

8           The objective of searcher efficiency trials is to estimate the percentage of bird and bat  
9 fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency  
10 trials on the fatality monitoring search plots in both grassland/shrub-steppe and cultivated  
11 agriculture habitat types. Searcher efficiency will be estimated by size class, habitat type and  
12 season. Estimates of searcher efficiency will be used to adjust carcass counts for detection bias.

13           During the first phase, searcher efficiency trials will be conducted in each season as  
14 defined above, during the years in which the fatality monitoring occurs. Trials will be spread  
15 throughout the year to incorporate the effects of varying weather, farming practices and  
16 scavenger densities. At least two trials will be conducted in each season. Each trial will use about  
17 20 carcasses, although the number will be variable so that the searcher will not know the total  
18 number of trial carcasses being used in any trial. For each trial, both small bird and large bird  
19 carcasses will be used in about equal numbers. “Small bird” and “large bird” size classes and  
20 carcass selection are as described above for the removal trials. A greater proportion of the trial  
21 carcasses will be distributed in cultivated agriculture habitat than in non-cultivated habitat  
22 (grassland/shrub steppe and CRP). In a year, about 100 carcasses will be placed in cultivated  
23 agriculture and about 60 in non-cultivated grassland/shrub steppe and CRP for a total of about  
24 160 trial carcasses. The number of searcher efficiency trials may be reduced to one per season  
25 (80 trial carcasses) during the second year of fatality monitoring, subject to approval by the  
26 Department, if the certificate holder can demonstrate that the calculation of fatality rates will  
27 continue to have statistical validity with the reduced sample size.

28           The need for, and scope of, searcher efficiency trials for subsequent phases may be  
29 modified based on the variability of results of searcher efficiency trials for the first phase, subject  
30 to the approval of the Department.

31           Personnel conducting searches will not know in advance when trials are conducted; nor  
32 will they know the location of the trial carcasses. If suitable trial carcasses are available, trials  
33 during the fall season will include several small brown birds to simulate bat carcasses. Legally  
34 obtained bat carcasses will be used if available.

35           On the day of a standardized fatality monitoring search (described below) but before the  
36 beginning of the search, efficiency trial carcasses will be placed at random locations within areas  
37 to be searched. If scavengers appear attracted by placement of carcasses, the carcasses will be  
38 distributed before dawn.

39           Searcher efficiency trials will be spread over the entire season to incorporate effects of  
40 varying weather and vegetation growth. Carcasses will be placed in a variety of postures to  
41 simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture  
42 (thrown over the shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 Each non-domestic carcass will be discreetly marked so that it can be identified as an  
2 efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses  
3 found during the carcass search will be recorded. The number of efficiency trial carcasses  
4 available for detection during each trial will be determined immediately after the trial by the  
5 person responsible for distributing the carcasses.

6 If new searchers are brought into the search team, additional detection trials will be  
7 conducted to ensure that detection rates incorporate searcher differences.

8 (d) Coordination with the Klondike III Wind Project

9 The proposed Klondike III Wind Project lies to the south of the BCWF on similar terrain  
10 and habitat. The Council has approved site certificates for both facilities and requires similar  
11 wildlife monitoring. Subject to the approval of both certificate holders and the Department, the  
12 number of trials at each site and the number of trial carcasses used at each site can be reduced by  
13 combining the removal data and efficiency data from both facilities, if the certificate holder can  
14 demonstrate that the calculation of fatality rates will continue to have statistical validity for both  
15 facilities and that combining the data will not affect any other requirements of the monitoring  
16 plans for either facility.

17 (e) Fatality Monitoring Search Protocol

18 The objective of fatality monitoring is to estimate the number of bird and bat fatalities  
19 that are attributable to facility operation and associated variances. The certificate holder shall  
20 conduct fatality monitoring using standardized carcass searches.

21 The certificate holder shall use a worst-case analysis to resolve any uncertainty in the  
22 results and to determine whether the data indicate that additional mitigation should be  
23 considered. The Department may require additional, targeted monitoring if the data indicate the  
24 potential for significant impacts that cannot be addressed by worst-case analysis and appropriate  
25 mitigation.

26 The certificate holder shall estimate the number of avian and bat fatalities attributable to  
27 operation of the facility based on the number of avian and bat fatalities found at the facility site.  
28 All carcasses located within areas surveyed, regardless of species, will be recorded and, if  
29 possible, a cause of death determined based on blind necropsy results. If a different cause of  
30 death is not apparent, the fatality will be attributed to facility operation. The total number of  
31 avian and bat carcasses will be estimated by adjusting for removal and searcher efficiency bias.

32 Personnel trained in proper search techniques (“the searchers”) will conduct the carcass  
33 searches by walking parallel transects within the search plots.<sup>3</sup> Transects will be initially set at 6  
34 meters apart in the area to be searched. A searcher will walk at a rate of about 45 to 60 meters  
35 per minute along each transect searching both sides out to three meters for casualties. Search area  
36 and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial.  
37 The searchers will record the condition of each carcass found, using the following condition  
38 categories:

- 39 ■ Intact – a carcass that is completely intact, is not badly decomposed and shows no  
40 sign of being fed upon by a predator or scavenger

---

<sup>3</sup> Where search plots are adjacent, the search area may be rectangular.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

- 1       ▪ Scavenged – an entire carcass that shows signs of being fed upon by a predator or  
2       scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs,  
3       pieces of skin, etc.)
- 4       ▪ Feather Spot – 10 or more feathers at one location indicating predation or scavenging  
5       or 2 or more primary feathers

6       All carcasses (avian and bat) found during the standardized carcass searches will be  
7       photographed as found, recorded and labeled with a unique number. Distance from observer to  
8       the carcass will be measured (to the nearest 0.25 meters), as will the perpendicular distance from  
9       the transect line to the carcass. Each carcass will be bagged and frozen for future reference and  
10      possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all  
11      times. For each carcass found, searchers will record species, sex and age when possible, date and  
12      time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that  
13      may indicate cause of death. Searchers will map the find on a detailed map of the search area  
14      showing the location of the wind turbines and associated facilities such as power lines. The  
15      certificate holder shall coordinate collection of state endangered, threatened, sensitive or other  
16      state protected species with ODFW. The certificate holder shall coordinate collection of  
17      federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian  
18      species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder shall obtain  
19      appropriate collection permits from ODFW and USFWS.

20      The searchers might discover carcasses incidental to formal carcass searches (e.g., while  
21      driving within the project area). For each incidentally discovered carcass, the searcher shall  
22      identify, photograph, record data and collect the carcass as would be done for carcasses within  
23      the formal search sample during scheduled searches

24      If the incidentally discovered carcass is found within a formal search plot, the fatality  
25      data will be included in the calculation of fatality rates. If the incidentally discovered carcass is  
26      found outside a formal search plot, the data will be reported separately.

27      The certificate holder shall coordinate collection of incidentally discovered state  
28      endangered, threatened, sensitive or other state protected species with ODFW. The certificate  
29      holder shall coordinate collection of incidentally discovered federally-listed endangered or  
30      threatened species and Migratory Bird Treaty Act protected avian species with the USFWS.

31      The certificate holder shall develop and follow a protocol for handling injured birds. Any  
32      injured native birds found on the facility site will be carefully captured by a trained project  
33      biologist or technician and transported to Jean Cypher (wildlife rehabilitator) in The Dalles, the  
34      Blue Mountain Wildlife Rehabilitation Center in Pendleton or the Audubon Bird Care Center in  
35      Portland in a timely fashion.<sup>4</sup> The certificate holder shall pay costs, if any are charged, for time  
36      and expenses related to care and rehabilitation of injured native birds found on the site, unless  
37      the cause of injury is clearly demonstrated to be unrelated to the facility operations.

38      (f) Statistical Methods for Fatality Estimates

39      The estimate of the total number of wind facility-related fatalities is based on:

---

<sup>4</sup> The people and centers listed here may be changed with Department approval.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

- 1 (1) The observed number of carcasses found during standardized searches during the two  
2 monitoring years for which the cause of death is attributed to the facility.<sup>5</sup>
- 3 (2) Searcher efficiency expressed as the proportion of planted carcasses found by  
4 searchers.
- 5 (3) Non-removal rates expressed as the estimated average probability a carcass is  
6 expected to remain in the study area and be available for detection by the searchers  
7 during the entire survey period.

8 Definition of Variables

9 The following variables are used in the equations below:

- 10  $c_i$  the number of carcasses detected at plot  $i$  for the study period of interest (e.g., one  
11 year) for which the cause of death is either unknown or is attributed to the facility
- 12  $n$  the number of search plots
- 13  $k$  the number of turbines searched (includes the turbines centered within each  
14 search plot and a proportion of the number of turbines adjacent to search plots to  
15 account for the effect of adjacent turbines on the 90-meter search plot buffer area)
- 16  $\bar{c}$  the average number of carcasses observed per turbine per year
- 17  $s$  the number of carcasses used in removal trials
- 18  $s_c$  the number of carcasses in removal trials that remain in the study area after 40  
19 days
- 20  $se$  standard error (square of the sample variance of the mean)
- 21  $t_i$  the time (days) a carcass remains in the study area before it is removed
- 22  $\bar{t}$  the average time (days) a carcass remains in the study area before it is removed
- 23  $d$  the total number of carcasses placed in searcher efficiency trials
- 24  $p$  the estimated proportion of detectable carcasses found by searchers
- 25  $I$  the average interval between searches in days
- 26  $\hat{\pi}$  the estimated probability that a carcass is both available to be found during a  
27 search and is found
- 28  $m_i$  the estimated annual average number of fatalities per turbine per year, adjusted  
29 for removal and observer detection bias
- 30  $C$  nameplate energy output of turbine in megawatts (MW)

31 Observed Number of Carcasses

32 The estimated average number of carcasses ( $\bar{c}$ ) observed per turbine per year is:

---

<sup>5</sup> If a different cause of death is not apparent, the fatality will be attributed to facility operation.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN  
[MAY 10, 2007]**

$$\bar{c} = \frac{\sum_{i=1}^n c_i}{k} . \tag{1}$$

Estimation of Carcass Removal

Estimates of carcass removal are used to adjust carcass counts for removal bias. Mean carcass removal time ( $\bar{t}$ ) is the average length of time a carcass remains at the site before it is removed:

$$\bar{t} = \frac{\sum_{i=1}^s t_i}{s - s_c} . \tag{2}$$

This estimator is the maximum likelihood estimator assuming the removal times follow an exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are removed before the end of the trial, then  $s_c$  is 0, and  $\bar{t}$  is just the arithmetic average of the removal times. Removal rates will be estimated by carcass size (small and large) and season.

Estimation of Observer Detection Rates

Observer detection rates (i.e., searcher efficiency rates) are expressed as  $p$ , the proportion of trial carcasses that are detected by searchers. Observer detection rates will be estimated by carcass size and season.

Estimation of Facility-Related Fatality Rates

The estimated per turbine annual fatality rate ( $m_t$ ) is calculated by:

$$m_t = \frac{\bar{c}}{\hat{\pi}} , \tag{3}$$

where  $\hat{\pi}$  includes adjustments for both carcass removal (from scavenging and other means) and observer detection bias assuming that the carcass removal times  $t_i$  follow an exponential distribution unless a different assumption about carcass removal is made with the approval of the Department. Under these assumptions, this detection probability is estimated by:

$$\hat{\pi} = \frac{\bar{t} \cdot p}{I} \cdot \left[ \frac{\exp\left(\frac{I}{\bar{t}}\right) - 1}{\exp\left(\frac{I}{\bar{t}}\right) - 1 + p} \right] . \tag{4}$$

The estimated per MW annual fatality rate ( $m$ ) is calculated by:

$$m = \frac{m_t}{C} . \tag{5}$$

The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds, (3) large birds, (4) raptors, (5) target grassland birds, (6) nocturnal avian migrants, 7) avian State Sensitive Species listed under OAR 635-100-0040, and 8) bats. The final reported estimates of  $m$ , associated standard errors and 90% confidence intervals will be calculated using bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 calculating point estimates, variances and confidence intervals for complicated test statistics. For  
 2 each iteration of the bootstrap, the plots will be sampled with replacement, trial carcasses will be  
 3 sampled with replacement and  $\bar{c}$ ,  $\bar{t}$ ,  $p$ ,  $\hat{\pi}$  and  $m$  will be calculated. A total of 5,000 bootstrap  
 4 iterations will be used. The reported estimates will be the means of the 5,000 bootstrap estimates.  
 5 The standard deviation of the bootstrap estimates is the estimated standard error. The lower 5<sup>th</sup>  
 6 and upper 95<sup>th</sup> percentiles of the 5000 bootstrap estimates are estimates of the lower limit and  
 7 upper limit of 90% confidence intervals.

8 Nocturnal Migrant and Bat Fatalities

9 Differences in observed nocturnal avian migrant and bat fatality rates for lit turbines,  
 10 unlit turbines that are adjacent to lit turbines, and unlit turbines that are not adjacent to lit  
 11 turbines will be compared graphically and statistically.

12 (g) Mitigation

13 Mitigation may be appropriate if analysis of the fatality data collected after two  
 14 monitoring years shows fatality rates for avian species that exceed a threshold of concern. For  
 15 the purpose of determining whether a threshold has been exceeded, the certificate holder shall  
 16 calculate the average annual fatality rates for the species groups after the initial two years of  
 17 monitoring. Based on current knowledge of the species that are likely to use the habitat in the  
 18 area of the facility, the following thresholds apply to the BCWF:

<b>Species Group</b>	<b>Threshold of Concern</b> (fatalities per MW)
Raptors (All eagles, hawks, falcons and owls, including burrowing owls.)	0.09
Raptor species of special concern (Swainson’s hawk, ferruginous hawk, peregrine falcon, golden eagle, bald eagle, burrowing owl and any federal threatened or endangered raptor species.)	0.06
Target grassland birds (All native bird species that rely on grassland habitat and are either resident species, occurring year round, or species that nest in the area, excluding horned lark, burrowing owl and northern harrier.)	0.59
State sensitive avian species listed under OAR 635-100-0040 (Excluding raptors listed above.)	0.20
Bat species as a group	2.50
Guyed Meteorological Tower Mortality	
Raptor T&E species and raptor species of special concern, as a group (Swainson’s hawk, ferruginous hawk, golden eagle and burrowing owl; bald eagle, peregrine falcon, and any other federal threatened or endangered raptor species)	0.20/ guyed tower
Avian State Sensitive Species listed under OAR 635-100-0040 (Excluding raptors)	0.20/ guyed tower

19 In addition, mitigation may be appropriate if fatality rates for individual species  
 20 (especially State Sensitive Species) are higher than expected and at a level of biological concern.  
 21 If the data show that a threshold of concern for a species group has been exceeded or that the  
 22 fatality rate for any individual species is at a level of biological concern, mitigation shall be  
 23 required if the Department determines that mitigation is appropriate based on analysis of the data  
 24 and any other significant information available at the time. If mitigation is appropriate, the  
 25 certificate holder, in consultation with ODFW, shall propose mitigation measures designed to

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 benefit the affected species. This may take into consideration whether mitigation required or  
2 provided for other impacts, such as raptor nesting or grassland bird displacement, would also  
3 benefit the affected species.

4 The certificate holder shall implement mitigation as approved by the Council. The  
5 Department may recommend additional, targeted data collection if the need for mitigation is  
6 unclear based on the information available at the time. The certificate holder shall implement  
7 such data collection as approved by the Council.

8 Mitigation shall be designed to benefit the affected species group. Mitigation may  
9 include, but is not limited to, protection of nesting habitat for the affected group of native species  
10 through a conservation easement or similar agreement. Tracts of land that are intact and  
11 functional for wildlife are preferable to degraded habitat areas. Preference should be given to  
12 protection of land that would otherwise be subject to development or use that would diminish the  
13 wildlife value of the land. In addition, mitigation measures might include: enhancement of the  
14 protected tract by weed removal and control; increasing the diversity of native grasses and forbs;  
15 planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for  
16 raptors; reducing cattle grazing; improving wildfire response; and local research that would aid  
17 in understanding more about the species and conservation needs.

18 If the threshold for bats species as a group is exceeded, the certificate holder shall  
19 contribute to Bat Conservation International or to a Pacific Northwest bat conservation group  
20 (\$10,000 per year for three years) to fund new or ongoing research in the Pacific Northwest to  
21 better understand impacts to the bat species impacted by the facility and to develop possible  
22 ways to reduce impacts to the affected species.

23 In addition, mitigation may be appropriate if fatality rates for a State Sensitive bat species  
24 listed under OAR 635-100-0040 are higher than expected and at a level of concern. If the data  
25 show that a threshold of concern for a species group has been exceeded or that the fatality rate  
26 for any individual species is at a level of concern, mitigation shall be required if the Department  
27 determines that mitigation is appropriate based on analysis of the data and any other significant  
28 information available at the time. If mitigation is appropriate, the certificate holder, in  
29 consultation with ODFW, shall propose mitigation measures designed to benefit the affected  
30 species. The certificate holder shall implement mitigation as approved by the Council.

## **2. Raptor Nest Surveys**

31 The objectives of raptor nest surveys are to estimate the size of the local breeding  
32 populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and  
33 to determine whether operation of the facility results in a reduction of nesting activity or nesting  
34 success in the local populations of the following raptor species: Swainson's hawk, ferruginous  
35 hawk and golden eagle. The certificate holder shall direct a qualified biologist, approved by the  
36 Department, to conduct the raptor nest surveys. The Department has approved the qualifications  
37 of the four biologists identified in the Final Order on Amendment #2. The certificate holder may  
38 select other qualified biologists to conduct the raptor nest surveys, subject to Department  
39 approval.

### **(a) Survey Protocol**

41 For the species listed above, aerial and ground surveys will be used to gather nest success  
42 data on active nests, nests with young and young fledged. The certificate holder will share the

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 data with state and federal biologists. The certificate holder shall conduct two years of post-  
2 construction raptor nest surveys for each phase of construction and long-term raptor nest surveys  
3 for the completed facility during the sensitive nesting and breeding season. One year of post-  
4 construction surveys will be done in the first nesting season after construction of the phase is  
5 completed. The second year of post-construction surveys will be done after construction of the  
6 phase is completed at a time recommended by the certificate holder and approved by the  
7 Department. Long-term surveys will be conducted starting in the fifth year following completion  
8 of the last post-construction survey and each five years thereafter for the life of the facility. The  
9 certificate holder may collaborate with other certificate holders in the vicinity of the facility in  
10 the development of useful information about future impacts on raptor nesting activity and nesting  
11 success.

12 Prior to the raptor nesting surveys, the certificate holder shall review the locations of  
13 known raptor nests based on the BCWF and Klondike Wind Project pre-construction surveys as  
14 well as any nest survey data collected after construction. All known nest sites and any new nests  
15 observed within the BCWF site and within two miles of the BCWF site will be given  
16 identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute  
17 quadrangle maps. Global positioning system coordinates will be recorded for each nest and  
18 integrated with the baseline database. Locations of inactive nests will also be recorded as they  
19 may become occupied during future years.

20 During each raptor nesting monitoring year, the certificate holder shall conduct a  
21 minimum of one helicopter survey in late May or early June within the BCWF site and a 2-mile  
22 zone around the turbines to determine nest occupancy. Determining nest occupancy will likely  
23 require two visits to each nest: The second visit may be done by air or by ground as appropriate.  
24 For occupied nests of the species identified above, the certificate holder shall determine nesting  
25 success by a minimum of one ground visit to determine species, number of young and nesting  
26 success. "Nesting success" means that the young have successfully fledged (the young are  
27 independent of the core nest site). Nests that cannot be monitored due to the landowner denying  
28 access will be checked from a distance where feasible.

29 (b) Mitigation

30 The certificate holder shall analyze the raptor nesting data collected after two monitoring  
31 years to determine whether a reduction in either nesting success or nest use has occurred in the  
32 vicinity of the BCWF. If the analysis indicates a reduction in nesting success by Swainson's  
33 hawk, ferruginous hawk or golden eagle within two miles of the facility (including the area  
34 within the BCWF site), then the certificate holder shall propose appropriate mitigation and shall  
35 implement mitigation as approved by the Council. At a minimum, if the analysis shows that any  
36 of these species has abandoned a nest territory within the facility site or within ½ mile of the  
37 facility site, or has not fledged any young over the two-year period within the facility site or  
38 within ½ mile of the facility site, the certificate holder shall assume the abandonment or  
39 unsuccessful fledging is the result of the facility unless another cause can be demonstrated  
40 convincingly. If the BCWF facility and the Klondike III facility are both required to provide  
41 mitigation for the same nest, the two certificate holders shall coordinate the required mitigation  
42 with the approval of the Department.

43 Given the very low buteo nesting densities in the area, statistical power to detect a  
44 relationship between distance from a wind turbine and nesting parameters (*e.g.*, number of



**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged  
2 based on trends in the data, results from other wind energy facility monitoring studies and  
3 literature on what is known regarding the populations in the region.

4 If the analysis shows that mitigation is appropriate, the certificate holder shall propose  
5 mitigation for the affected species in consultation with the Department and ODFW, and shall  
6 implement mitigation as approved by the Council. Mitigation should be designed to benefit the  
7 affected species or contribute to overall scientific knowledge and understanding of what causes  
8 nest abandonment or nest failure. Mitigation may be designed to proceed in phases over several  
9 years. It may include, but is not limited to, additional raptor nest monitoring, protection of  
10 natural nest sites from human disturbance or cattle activity (preferably within the general area of  
11 the facility), or participation in research projects designed to improve scientific understanding of  
12 the needs of the affected species. Mitigation may take into consideration whether mitigation  
13 required or provided for other impacts, such as fatality impacts or grassland bird displacement,  
14 would also benefit the raptor species whose nesting success was adversely affected.

**3. Avian Use and Behavior Surveys**

15 The certificate holder shall conduct a before/after avian behavior and monitoring study to  
16 determine whether operation of the BCWF reduces bird use and abundance in the area (often  
17 referred to as displacement). The results of this study will aid in estimating indirect avian  
18 impacts of the BCWF and guide potential mitigation.

19 The before/after study will use two of the observation stations that were used during the  
20 baseline study (H and I) and two new survey stations (A5 and A6).<sup>6</sup> Avian use and behavior will  
21 be monitored at these four stations 6 times each month from November 2005 – August 15, 2006  
22 (pre-construction period) and 6 times each month during two post-construction monitoring years  
23 (after construction of wind turbines located near these survey stations).<sup>7</sup>

24 These four stations are located in the northeastern portion of the BCWF area near the  
25 John Day River canyon. The areas surrounding these survey stations were subject to numerous  
26 micro-siting decisions during facility layout. Primary micro-siting decisions included shortening  
27 and re-orientating turbine corridors to avoid native habitat, maintaining a minimum one-mile  
28 distance from the centerline of the John Day River, and avoiding locating turbines on steep  
29 slopes.

30 Each survey will consist of one 30-minute observation period at each of these four  
31 stations using the same protocol that was used for baseline data collection. In particular, raptor  
32 and waterfowl use estimates and behavior relative to turbine locations and flight path maps will  
33 be compared between the pre- and post-construction periods to provide information on raptor  
34 and waterfowl displacement and to estimate indirect impacts on raptors and waterfowl. The  
35 phrase “behavior relative to turbine locations” is intended to address observations of behavior  
36 that is different near turbines compared to behavior away from turbines.

37 In addition to surveys at these four stations, searchers will also record bird species  
38 observed and their behavior relative to turbine locations before or after each standardized carcass

---

<sup>6</sup> The observation stations are identified in a report by Western EcoSystems Technology, Inc., “John Day Avian Studies for the Biglow Canyon Wind Farm Project, February 2007.”

<sup>7</sup> Fewer than 6 monitoring sessions may be conducted if necessary due to safety reasons or severe weather.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1 search (as described in Section 1(e) above). Observations will be recorded during 5-minute  
2 surveys at each turbine sampled during the fatality monitoring program, using standard variable  
3 circular plot point count survey methods. Collection and recording of these additional  
4 observations of live birds will be carried out in a manner that does not distract searchers from  
5 carrying out the standardized carcass searches.

6 All of these avian use and behavior data, as well as raptor and waterfowl mortality  
7 observed at the turbines near these stations, will be used to understand direct and indirect impacts  
8 of the BCWF facility on raptors, waterfowl and other avian species. The certificate holder shall  
9 include an analysis of this data in the reports described in Section 5.

**4. Biglow Wildlife Incident Response and Handling System**

10 The Wildlife Incident Response and Handling System is a monitoring program set up for  
11 responding to and handling avian and bat casualties found by construction and maintenance  
12 personnel during construction and operation of the facility. This monitoring program includes the  
13 initial response, the handling and the reporting of bird and bat carcasses discovered incidental to  
14 construction and maintenance operations (“incidental finds”). Construction and maintenance  
15 personnel will be trained in the methods needed to carry out this program.

16 All carcasses discovered by construction or maintenance personnel will be photographed,  
17 recorded and collected.

18 If construction or maintenance personnel find carcasses within the plots for protocol  
19 searches, they will notify a qualified biologist, as approved by the Department, who will collect  
20 the carcasses. The fatality data will be included in the calculation of fatality rates.

21 If construction or maintenance personnel discover incidental finds that are not within  
22 plots for fatality monitoring protocol searches, they will notify a qualified biologist, as approved  
23 by the Department, and the carcass will be collected by a carcass-handling permittee (a person  
24 who is listed on state and federal scientific or salvage collection permits). Data for these  
25 incidental finds will be reported separately from standardized fatality monitoring data.

26 The certificate holder shall coordinate collection of state endangered, threatened,  
27 sensitive or other state protected species with ODFW. The certificate holder shall coordinate  
28 collection of federally-listed endangered or threatened species and Migratory Bird Treaty Act  
29 protected avian species with the USFWS.

**5. Data Reporting**

30 The certificate holder will report the monitoring data and analysis to the Department.  
31 Monitoring data include fatality monitoring program data, raptor nest survey data, avian use and  
32 behavior survey data and data on incidental finds by fatality searchers and BCWF personnel. The  
33 report may be included in the annual report required under OAR 345-026-0080 or may be  
34 submitted as a separate document at the same time the annual report is submitted. In addition, the  
35 certificate holder shall provide to the Department any data or record generated in carrying out  
36 this monitoring plan upon request by the Department.

37 The certificate holder shall immediately notify USFWS and ODFW, respectively, in the  
38 event that any federal or state endangered or threatened species are killed or injured on the  
39 facility site.

**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[MAY 10, 2007]**

1           The public will have an opportunity to receive information about monitoring results and  
2 to offer comment. Within 30 days after receiving the annual report of monitoring results, the  
3 Department will make the report available to the public on its website and will specify a time in  
4 which the public may submit comments to the Department.<sup>8</sup>

**6. Amendment of the Plan**

5           This Wildlife Monitoring and Mitigation Plan may be amended from time to time by  
6 agreement of the certificate holder and the Council. Such amendments may be made without  
7 amendment of the site certificate. The Council authorizes the Department to agree to  
8 amendments to this plan and to mitigation actions that may be required under this plan. The  
9 Department shall notify the Council of all amendments and mitigation actions, and the Council  
10 retains the authority to approve, reject or modify any amendment of this plan or mitigation action  
11 agreed to by the Department.

---

<sup>8</sup> The certificate holder may establish a Technical Advisor Committee (TAC) but is not required to do so. If the certificate holder establishes a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

**Attachment 2: Annual Wildlife Monitoring Report (2023)**

## **INTRODUCTION**

The Site Certificate for Biglow Canyon Wind Farm (BCWF) (EFSC 2008B) requires mitigation and monitoring for facility impacts on wildlife and associated habitats. Three plans, incorporated by reference in the Site Certificate describe the mitigation and monitoring requirements in detail. These include the Wildlife Monitoring and Mitigation Plan (Condition 61), Revegetation Plan (Condition 62), and Habitat Mitigation Plan (Condition 63). The following sections describe the 2023 activities conducted in accordance with the three plans and other Site Certificate wildlife-related requirements.

## **WILDLIFE MONITORING AND MITIGATION PLAN**

The BCWF Wildlife Monitoring and Mitigation Plan describes wildlife monitoring that Portland General Electric (PGE) must conduct during operation of the facility, including: 1) avian and bat fatality monitoring; 2) raptor nesting surveys; 3) avian use and behavior surveys; and 4) wildlife incident response and handling (EFSC 2007). The bird and bat standardized fatality monitoring and avian use and behavior surveys were completed within the first two years after operations began for each phase, per requirements under the Site Certificate. Long-term raptor nest surveys are required every five years for the life of the facility and will be completed again in 2027. Details of the annual Wildlife Incident Response and Handling System for 2023 are reported below.

### **Wildlife Incident Response and Handling System**

The Wildlife Incident Response and Handling System is a program for responding to and handling avian and bat injuries and fatalities found by personnel at the project site during construction and routine maintenance operations. PGE maintains an Oregon Department of Fish & Wildlife (ODFW) Scientific Take Permit (#037-23, Attachment A) and a U.S. Fish and Wildlife Service (USFWS) Migratory Bird Special Purpose Permit (MB# 47716B-2, Attachment B) to lawfully collect and handle protected birds and bats. In May 2020, PGE received its Biglow Canyon Long-term Eagle Incidental Take Permit (#MB63507B-0, Attachment C) from the USFWS. Additional surveys by a third-party contractor began onsite in August 2020 and continued through August 2023. Consistent with permit requirements, PGE filed annual reports with ODFW and USFWS for bird and bat incidents reported in 2023 at BCWF. PGE site staff attended annual compliance training, which includes bird and bat handling instruction and eagle take permit compliance requirements.

Five avian fatalities, one bird injury, and one bat fatality were reported in 2023. Two of the six reported bird events were found during third-party eagle fatality monitoring and the remaining four were found incidentally by site staff. The bat was incidentally found by site staff. The annual permit reports were electronically filed with ODFW and USFWS as required by each permit. Copies of the reports are available by contacting Lenna Cope ([lenna.cope@pgn.com](mailto:lenna.cope@pgn.com)) or Kristi Boken ([kristi.boken@pgn.com](mailto:kristi.boken@pgn.com)).