



Oregon

Tina Kotek, Governor



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To: Oregon Energy Facility Siting Council

From: Sarah Esterson, Senior Policy Advisor

Date: August 9, 2024

Subject: Leaning Juniper IIB Wind Power Facility – Annual Monitoring for Wildlife Monitoring and Mitigation Plan (Condition 87)

Attachments: Amended Wildlife Monitoring and Mitigation Plan (November 6, 2015)
Annual Wildlife Monitoring Report (2023)

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 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

Leaning Juniper IIB Wind Power Facility is a wind energy generation facility consisting of 74 wind turbines, with a peak generating capacity of 111 megawatts (MW). The facility is in Gilliam County. The Council issued a site certificate for the facility in 2007.

Condition 87 of the site certificate states that, "The certificate shall conduct wildlife monitoring as described in the Wildlife Monitoring and Mitigation Plan (WMMP) that is incorporated in the Final Order on Amendment #2 for LJF as Attachment D and as 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 a Grassland Bird Study; these wildlife monitoring activities were completed in 2012-13. On-going long-term wildlife monitoring requirements include:

- Washington Ground Squirrel Surveys (Every 3-years for operational life of facility; 2014, 2017, 2020, 2023, etc.)
- Long-Term Raptor Nesting Surveys (Every 5-years for operational life of facility; 2015,

- 2020, 2025, etc.)
- Wildlife Monitoring and Reporting System (Ongoing)

Washington Ground Squirrel Surveys

The WMMP establishes that the certificate holder conduct long-term monitoring for areas of previous use by Washington Ground Squirrel (WGS). Washington ground squirrel monitoring occurs every 3 years after project operation and surveys were completed in 2014, 2017 and 2021.¹ In 2017, WGS activity was detected at two of the ten survey areas. In 2021, 76 WGS borrows were documented within two of the ten survey areas.

In 2023, the monitoring was conducted from April through June. Approximately 34 ground squirrel burrows were documented within the Survey Area for LJIIB including 20 burrows at sites 16–17 and approximately 14 burrows at sites 22a–b and 24. The location and extent of WGS activity documented at LJIIB in 2023 was like that recorded in 2017 but represents a 26% increase in area of use compared with the most recent 2021 surveys.

Raptor Nest Monitoring

The objectives of long-term raptor nest monitoring are to determine the size of breeding populations of raptor species in the vicinity of the facility, with a focus on Swainson’s hawk, golden eagle, ferruginous hawk and burrowing owl; and, to determine whether facility operations have resulted in a reduction in nest use or nest success on local populations of these species. Results of the long-term raptor nest monitoring are presented in Table 1b below.

Table 1b. Results of 2011, 2015, 2020, and 2021 raptor nest surveys at the Leaning Juniper IIB Wind Project, Gilliam County, Oregon. Results provided at two spatial scales: 0.5 miles (mi) and 2.0 mi from permit boundary.

Species	2011		2015		2020		2021	
	Within 0.5 mi	Within 2 mi	Within 0.5 mi	Within 2 mi	Within 0.5 mi	Within 2 mi	Within 0.5 mi	Within 2 mi
Golden eagle	0	0	0	0	0	0	0	0
Ferruginous hawk	1	1	1	1	1	1	1	1
Swainson’s hawk	9	20	7	14	7	21	8	25
Red-tailed hawk	6	14	4	6	3	7	5	15
Burrowing owl	0	1	0	0	-	-	0	0
Peregrine falcon	0	0	0	0	0	0	0	0
Prairie falcon	0	2	0	0	0	0	0	0
Great horned owl	2	3	0	0	1	5	2	6
Barn owl	0	0	0	0	0	0	0	0
Total Active Raptor Nests	18	41	12	21	12	34	16	47
Common raven	2	7	6	13	7	23	10	33
Inactive nest	1	2	4	6	7	28	5	19
Total Nests	21	50	22	40	26	85	31	99

¹ Surveys did not occur in 2020 due to survey disruptions related to COVID-19 travel restrictions in the spring of 2020.

As presented above, during the 2021 aerial raptor nest survey, 99 total nest sites were recorded, 47 of which were active raptor nests including ferruginous hawk and Swainson's hawk.

The overall number of raptor nests increased between 2011 to 2021, from 41 to 47. Results indicate generally stable numbers of active nests for all raptor species, both at the 0.5-mile and 2-mile spatial scales. No real pattern has developed thus far among raptor species. Common raven nesting has increased over time. The next raptor nest and burrowing owl surveys will occur in 2025.

Wildlife Monitoring and Reporting System

Monitoring requirements for this facility include the ongoing Wildlife Monitoring and Reporting System, a program for responding to and handling avian and bat casualties found by personnel at the site during routine maintenance operations. The certificate holder is obligated to notify USFWS and ODFW if federal or state endangered or threatened species are killed or injured onsite. During operations in 2023, one bird carcass, a horned lark, was found near turbine KK2 by operations staff on March 15, 2023. No other wildlife fatalities or injuries were recorded by operations staff.

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 Leaning Juniper IIB Wind Power Facility 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/LJB.aspx> and has established 60-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

Attachment 1: Amended Wildlife Monitoring and Mitigation Plan (November 6, 2015)

Leaning Juniper IIA and IIB Wind Projects: Ongoing Wildlife Monitoring and Mitigation Plan

[NOVEMBER 6, 2015]

1 This Ongoing Wildlife Monitoring and Mitigation Plan (the Plan) describes wildlife
2 monitoring that the certificate holders shall conduct during operation of the Leaning Juniper IIA
3 and IIB Wind Power Facilities.¹ The ongoing monitoring objectives are to determine whether the
4 facility causes significant fatalities of birds and bats and to determine whether the facility results
5 in a loss of habitat quality.

6 Following Amendment 2 of the original Leaning Juniper II Wind Power Facility site
7 certificate, the single facility was divided into two separate facilities, with LJIIA and LJIIB each
8 receiving its own site certificate. However, the site certificate holders agreed to share mitigation
9 and environmental responsibilities. Therefore, the requirements for the facility as a whole,
10 including both LJIIA and LJIIB, remain in this Wildlife Monitoring and Mitigation Plan
11 (WMMP) and each individual site certificate holder remains bound by its terms.

12 Collectively, LJIIA and LJIIB ('the Facilities' or 'LJIIA/B') consists of 117 wind
13 turbines, four non-guyed meteorological (met) towers and other related or supporting facilities as
14 described in the site certificate. The permanent facility components occupy approximately 111
15 acres, of which up to 52 acres is Category 5 wildlife habitat or better, based on the Oregon
16 Department of Fish and Wildlife (ODFW) standards (OAR 635-415-0025).²

17 Each certificate holder shall use experienced personnel to implement the ongoing
18 monitoring required under this plan and properly trained personnel to conduct the monitoring,
19 subject to approval by the Oregon Department of Energy (Department) as to professional
20 qualifications. For all components of this plan except the Wildlife Monitoring and Reporting
21 System (WMRS), each certificate holder shall hire an independent third party (not employees of
22 the certificate holder) to perform monitoring tasks.

23 The Wildlife Monitoring and Mitigation Plan for the Facilities originally included the
24 following components:

- 25 1) Fatality monitoring program including: (completed, Downes et al. 2013)
 - 26 a) Removal trials
 - 27 b) Searcher efficiency trials
 - 28 c) Fatality search protocol
 - 29 d) Statistical analysis
- 30 2) Raptor nesting surveys (ongoing)
- 31 3) Washington ground squirrel surveys (ongoing)
- 32 4) Grassland bird study (completed, Downes and Gritski 2014)

¹ This plan is incorporated by reference in the site certificate for the LJJF 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 holders.

² A more complete description of the habitat areas affected by the Facilities, LJIIA and LJIIB, is provided in the Final Order on Amendment #1, Section IV.4(b), which expanded the site boundary to include LJIIB.

Leaning Juniper IIA and IIB Wildlife Monitoring and Mitigation Plan

[NOVEMBER 6, 2015]

5) Wildlife Monitoring and Reporting System (ongoing)

Since the original Wildlife Monitoring and Mitigation Plan was adopted on November 20, 2009 (and updated in June 21, 2013), the requirements of (1) and (4) and the initial requirements of (2), (3), (5), and (6) above have been completed, as reflected and described in this Plan. This Plan reflects the ongoing, long-term monitoring and mitigation requirements for raptor nesting surveys (Section 2), Washington ground squirrel surveys (Section 3), and the Wildlife Monitoring and Reporting System (Sections 5 and 6). Section 8, Literature Cited, was added to provide references and sources for completed requirements of the Plan.

Based on the results of the monitoring programs, mitigation of significant impacts may be required. The selection of the mitigation actions should allow for flexibility in creating appropriate responses to monitoring results that cannot be known in advance. If the Department determines that mitigation is needed, the certificate holders shall propose appropriate mitigation actions to the Department and shall carry out mitigation actions approved by the Department, subject to review by the Oregon Energy Facility Council (Council).

1. Fatality Monitoring

The certificate holders conducted two years of post-construction fatality monitoring following substantial completion or commercial operations date (COD) of the Facilities reflecting operating impacts on wildlife. The results of the post-construction fatality monitoring are presented in Downes et al. (2013).

2. Raptor Nest Surveys

The objectives of raptor nest surveys are: (1) to estimate the size of the local breeding populations of raptor species that nest on the ground or aboveground in trees or other aboveground nest locations in the vicinity of the facility; and (2) to determine whether operation of the facility results in a reduction of nesting activity or nesting success in the local populations of the following raptor species: Swainson's hawk, golden eagle, ferruginous hawk and burrowing owl. For each phase of LJIIA/B, the certificate holder conducted the first year of post-construction raptor nest surveys in 2011 (Downes et al. 2012), the first raptor nesting season after construction of that phase was completed. The second year of surveys was done in 2015 with results presented in Gerhardt and Kronner (2015). Hereafter, the certificate holders shall conduct long-term raptor nest surveys as described below and summarized in Section 2(d). The certificate holder will share the data with state and federal biologists

(a) Survey Protocol

- For Raptor Species that Nest Aboveground

During long-term survey years, each certificate holder shall use aerial and ground surveys to evaluate nest success by gathering data on active nests, on nests with young and on young fledged.. Each certificate holder will conduct aerial surveys to determine nest occupancy in late May or early June within the site and a 2-mile buffer around the site (as identified in Downes et al., 2012, Leaning Juniper II Wildlife Monitoring Report for 2011–2012). Two helicopter visits to each nest may be required to determine *occupancy*. These surveys may be coordinated with adjacent wind facilities. All nests discovered during pre-construction surveys and any nests discovered during post-construction surveys, whether active or inactive, will be given identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute

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1 quadrangle maps. Global positioning system coordinates will be recorded for each nest.
2 Locations of inactive nests will be recorded because they could become occupied during future
3 years. For occupied nests, the certificate holder shall determine nesting *success* by a minimum
4 of one ground visit to determine species, number of young and young fledged. “Nesting success”
5 means that the young have successfully fledged (reach advanced stage of development, the
6 young are capable of independent movements). Nests that cannot be monitored due to the
7 landowner denying aerial or ground access will be checked from a distance where feasible.

8 For Burrowing Owls The certificate holders monitored burrowing owl nests in 2011 and
9 in 2015 (Downes et al. 2012, Gerhardt and Kronner 2015). Hereafter, each certificate holder will
10 survey burrowing owl nest sites discovered during pre- and post-construction surveys (as
11 identified in Downes et al., 2012, Leaning Juniper II Wildlife Monitoring Report for 2011–2012)
12 as a part of the long-term raptor nest monitoring program described above and in Section 2(d).
13 Any nests discovered during future post-construction surveys, whether active or showing signs
14 of intermittent use by the species will be given identification numbers and monitored. Nest
15 locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global
16 positioning system coordinates will be recorded for each nest site. Coordinates for ancillary
17 burrows used by one nesting pair or a group of nesting pairs will also be recorded. Locations of
18 inactive nests will be recorded because they could become occupied during future years.

19 (b) Analysis

20 For each phase of the facility, the certificate holders analyzed the raptor nesting
21 data collected after two survey years to determine whether a reduction in either nesting success
22 or nest use has occurred in the vicinity of the facility (see Gerhardt and Kronner 2015).. The
23 number of nests and raptor species composition demonstrated natural variation within the typical
24 range of the various species, between 2011 and 2015. The Swainson’s hawk nesting density
25 continued to be high for a landscape dominated by natural habitats. Much of this variability can
26 be attributed to natural conditions associated with precipitation levels, available prey base (voles,
27 ground squirrels, and invertebrates), and interspecies (common raven) competition.

28 (c) Mitigation

29 The certificate holders shall propose mitigation for the affected species in consultation
30 with the Department and ODFW and shall implement mitigation as approved by the Council (see
31 Section 2(d)).

32 (d) Long-term Raptor Nest Monitoring and Mitigation Plan

33 In addition to the two years of post-construction raptor nest surveys described in Section
34 2(a), each certificate holder shall conduct long-term raptor nest surveys at five-year intervals for
35 the life of the facility.³ The certificate holders shall conduct the first long-term raptor nest survey
36 in 2020. In conducting long-term surveys, the certificate holders shall follow the same survey
37 protocols as described above in Section 2(a) and in Gerhardt and Kronner (2015) unless the
38 certificate holders propose an alternative protocol that is approved by the Department. In
39 developing an alternative protocol, the certificate holders shall consult with ODFW.

³ 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 Each certificate holder shall analyze the raptor nesting data collected after each year of
2 long-term raptor nest surveys to determine whether a reduction in either nesting success or nest
3 use has occurred in the vicinity of the facility. If the analysis indicates a reduction in nesting
4 success or nest use by Swainson's hawks, golden eagles, ferruginous hawks or burrowing owls
5 within the facility site or within 2 miles of the facility site, then the certificate holders shall
6 propose appropriate mitigation for the affected species as described in Section 2(a) and shall
7 implement mitigation as approved by the Council. At a minimum, if the analysis shows that any
8 raptors of these species have abandoned a nest territory within the facility site or within ½ mile
9 of the facility site or has not fledged any young over the two survey years within that same area,
10 the certificate holders shall assume the abandonment or unsuccessful fledging is due to operation
11 of the facility unless another cause can be demonstrated convincingly.

12 Any reduction in nesting success or nest use could be due to operation of the facility,
13 operation of another wind facility in the vicinity or some other cause, including changes in land
14 use patterns after construction of the facility. The certificate holders shall attribute the reduction
15 to operation of LJIIA/B if the wind turbine closest to the affected nest site is an LJIIA/B turbine
16 unless the certificate holder demonstrates, and the Department agrees, that the reduction was due
17 to a different cause.

18 Given the low raptor nesting densities in the area and the presence of other wind energy
19 facilities nearby, statistical power to detect a relationship between distances from a wind turbine
20 and nesting parameters (e.g., number of fledglings per reproductive pair) will be very low.
21 Therefore, impacts may have to be judged based on trends in the data, results from other wind
22 energy facility monitoring studies and literature on what is known regarding the populations in
23 the region.

24 3. Washington Ground Squirrel Surveys

25 For the LJIIA/B area, the certificate holders conducted surveys in 2011, the year
26 following construction, and 2014 to collect data on Washington ground squirrel (WGS) activity
27 within the lease boundary (Downes et al. 2012, 2014). A qualified professional biologist
28 monitored the WGS sites in the facility identified during the pre-construction surveys (2005
29 through 2007) and the buffer area within 500 feet in all directions from the identified WGS sites
30 in suitable habitat. The sites include the historic areas at LJIIA/B (as identified in Downes et al.
31 2012). Overall, WGS are active in the area but have shifted areas of occupancy from pre-
32 construction boundaries.

33 Hereafter, the certificate holders shall conduct long-term WGS use surveys at LJII-A/B)
34 every three years for the life of the facility (2017, 2020, 2023...). Post-construction WGS
35 monitoring for the LJIIA/B areas will assess the status (occurrence) and use (extent) of
36 colonies. Surveyors will conduct standard recording protocols (level of use, notes on natal sites
37 and physical extent of the sites) during meandering pedestrian (40-60 m spacing) surveys of the
38 identified sites and suitable habitat within 500 ft. buffer twice between late March and late
39 May, during the active WGS periods. The biologist will also record incidental observations
40 (including mapping and dates of observation) during other survey activities on the facility
41 sites. These observations shall also include current land use and any land use or project-caused
42 conditions (erosion, declines in vegetation quality) that may adversely affect WGS sites. This
43 monitoring will be consistent with the Incidental Take Permit (ITP) application for LJIIA as set
44 forth in Attachment E of the Final Order on the Application. These surveys may be coordinated

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1 with adjacent wind facilities to enhance data collection and analysis of WGS activity in the area.

2 **4. Grassland Bird Study**

3 The grassland bird study was a 2-year, post-construction evaluation of grassland bird use
4 in the Facility area. Parts of the Facility occupy native habitat suitable for various ground-nesting
5 bird species that nest in grassland or open low shrub habitat. The objective of the post-
6 construction grassland bird study is to determine if there are noticeable changes in the presence
7 and overall use by special status grassland bird species compared to pre-construction data
8 collected in 2006.

9 (a) Study Area

10 The study areas were located within the LJIIA/B area and covered approximately 1,362
11 acres.⁴ The study areas were selected because they are somewhat removed from human activity
12 (except low traffic use on facility access roads and one county road) and contain a large area of
13 grassland/shrub-steppe habitat (mapped as habitat sub-type “SSB”) that is not proposed to be
14 altered during project construction or operations.

15 (b) Survey Protocol

16 The certificate holders conducted the first year of post-construction grassland surveys in
17 2011, the first spring following the beginning of commercial operation of the facility (Downes et
18 al. 2012). The certificate holders conducted a second year of grassland surveys in 2014.
19 Findings of the grassland bird study were presented Downes and Gritski (2014).

20 (c) Data Analysis and Reporting

21 After the first survey year (2011), the certificate holders submitted a preliminary
22 summary report to the Department (Downes et al. 2012). After the second survey year (2014),
23 the certificate holders submitted a more comprehensive final report (Downes and Gritski 2014).
24 Overall, no noticeable change in presence and overall use by special status grassland birds was
25 observed when compared to pre-construction findings.

26 **5. Wildlife Monitoring and Reporting System**

27 The Wildlife Monitoring and Reporting System (WMRS) is an on-going monitoring
28 program to report avian and bat casualties found by maintenance personnel during operation of
29 the facility. It consists of weekly Environmental Coordinator (EC) Inspections of selected
30 turbines conducted during both spring and fall migration seasons, monthly SPCC Turbine
31 Checks of every turbine, and Incidental Observations with discovery of bird and bat carcasses
32 and injured wildlife incidental to operations and maintenance. The certificate holders’
33 maintenance personnel will be trained in the methods needed to carry out this program.

34 All avian and bat carcasses discovered by the certificate holders’ maintenance personnel
35 will be reported to the on-site EC for same day data recording (species, location, date,
36 conditions) and for photo documentation. This information will be processed within WRMS and
37 reviewed by the certificate holders biologists for confirmation of information and identification.
38 If the carcass is suspected to be an eagle or a state or federally- listed endangered or threatened

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1 species, the certificate holders will contact ODFW and US Fish and Wildlife Service (USFWS)
2 to report and coordinate collection. The certificate holder will secure the carcass (e.g., cover with
3 a container) until, if appropriate, collection is completed. The certificate holders will not handle
4 or transport any bat or bat carcass without a state or federal scientific collection or special use
5 permit (SPUT).

6 **6. Data Reporting**

7 Each certificate holder will report wildlife monitoring data and analysis to the
8 Department. Monitoring data include fatality monitoring program data; raptor nest survey data;
9 WGS survey data, incidental observation, and assessment reports; grassland bird study data; and
10 WMRS (specifically eagles or state and federally-listed endangered or threatened species) data.
11 The certificate holders may include the reporting of wildlife monitoring data and analysis in the
12 annual report required under OAR 345-026-0080 or submit this information as a separate
13 document at the same time the annual report is submitted. In addition, the certificate holder shall
14 provide to the Department any data or record generated in carrying out this monitoring plan upon
15 request by the Department.

16 The certificate holders shall notify USFWS and ODFW immediately if any federal or
17 state endangered or threatened species are killed or injured on the facility site.

18 The public will have an opportunity to receive information about monitoring results and
19 to offer comment. Within 30 days after receiving the final versions of reports that are required
20 under this plan, the Department will make the reports available to the public on its website and
21 will specify a time in which the public may submit comments to the Department.⁵

22 **7. Amendment of the Plan**

23 This Wildlife Monitoring and Mitigation Plan may be amended from time to time by
24 agreement of the certificate holders and the Council. Such amendments may be made without
25 amendment of the site certificate. The Council authorizes the Department to agree to
26 amendments to this Plan and to mitigation actions that may be required under this Plan. The
27 Department shall notify the Council of all amendments and mitigation actions, and the Council
28 retains the authority to approve, reject, or modify any amendment of this Plan or mitigation
29 action agreed to by the Department.

30 **8. Literature Cited (Documents cited are available on the Oregon Department of Energy 31 web site)**

32 Downes, S., B. Gritski, B. Anderson, and S. Zielin. 2012. Leaning Juniper II Wind Power
33 Facility Wildlife Monitoring Study Annual Report, March 2011—July 2012. Prepared for
34 Leaning Juniper II, LLC, Portland, Oregon. Prepared by Northwest Wildlife Consultants,
35 Inc. dated October 23, 2012.

36 Downes, S., B. Gritski, and S. Woods. 2013. Leaning Juniper II Wind Power Facility Wildlife
37 Fatality Monitoring Study January 2011-July 2013. Prepared for Iberdrola Renewables,
38 Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon
39 dated November 27, 2013.

⁵ The certificate holders may establish a Technical Advisor Committee (TAC) but are not required to do so. If the certificate holders establish a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

Leaning Juniper IIA and IIB Wildlife Monitoring and Mitigation Plan

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- 1 Downes, S. and B. Gritski. 2014. Leaning Juniper II Wind Power Facility 2014 Wildlife
2 Monitoring. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by
3 Northwest Wildlife Consultants, Inc., Pendleton, Oregon dated October 6, 2014.
- 4 Gerhardt R. and K. Kronner. 2015. Leaning Juniper II Wind Power Facility Raptor Nest
5 Survey 2015. Report prepared by Northwest Wildlife Consultants, Inc. dated September
6 15, 2015 Leaning Juniper Wind Power II (LJWP II), LLC. 2013. Leaning Juniper IIA and
7 IIB Wind Project: Wildlife Monitoring and Mitigation Plan. June 21, 2013. Oregon
8 Energy Facility Siting Council of the State of Oregon, Final Order on Amendment #2-
9 Attachment D. Second Amended Site Certificate for the Leaning Juniper II Wind Power
10 Facilities.

Attachment 2: Annual Wildlife Monitoring Report (2023)



30 April 2024

VIA EMAIL

Amrit Kaur
Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, OR 97301

Re: Leaning Juniper IIB Facility - 2023 EFSC Annual Report (Condition 21)

Dear Amrit:

Leaning Juniper Wind Power II, LLC (LJII), a wholly owned subsidiary of Avangrid Renewables LLC, provides the following information to comply with its general reporting requirements under OAR 345-026-0080 (Condition 21) for the Leaning Juniper IIB Facility (LJIIB).

Condition 21(b)(v) - Monitoring Report:

Monitoring for LJIIB includes the Revegetation Plan (Condition 74), Weed Control Plan (Condition 82), Habitat Mitigation Plan (Condition 87), and Wildlife - WMMP (Condition 87).

Condition 87: Wildlife Monitoring

As outlined in the Wildlife Monitoring and Mitigation Plan (“WMMP”), LJII completed avian and bat fatality monitoring from 2011 to 2013. Washington ground squirrel monitoring occurs every 3 years after project operation and surveys were completed in 2014 and 2017. Burrowing owl surveys are required every 5 years and the initial survey occurred in 2015. Washington ground squirrel and burrowing owl surveys planned for 2020 were complete in the spring of 2021 (See 2021 Annual Report for details). Raptor nest monitoring was completed in 2011 and 2015. ODFW conducted Raptor nest surveys of the area in 2020 and 2021 and shared that data. In 2022, a report summarizing the ODFW raptor data in relation to LJIIA and LJIIB was completed. The next raptor nest and burrowing owl surveys will occur in 2025; Enclosure 4.

Washington Ground Squirrel

Washington Ground Squirrel (*Urocitellus washingtoni*) is an Oregon State Endangered species and has the potential to occur in the project area. In 2023 monitoring was conducted from April through June. No evidence of WGS was detected during either survey round within LJIIA Survey Area and all nine historical areas of use were determined to be absent. The absence of any detection of burrows within the LJIIA Survey Area suggests these areas are no longer occupied by WGS. At LJIIB, approximately 34 ground squirrel burrows were documented within the Survey Area including 20 burrows at sites 16–17 and approximately 14 burrows at sites 22a–b and 24. The location and extent of WGS activity documented at LJIIB in 2023 was like that recorded in 2017 but represents a 26% increase in area of use compared with the most recent 2021 surveys.

Wildlife Monitoring and Reporting System

During operation in 2023, operations staff recorded incidental observations of downed wildlife listed below.

LJIIIB

Date	Location of Discovery	Species
05/03/2023	K2	Silver-haired bat
04/24/2023	O&M Building	Say's phoebe

LJIIB

Date	Location of Discovery	Species
03/15/2023	KK2	Horned lark



ENVIRONMENTAL & STATISTICAL CONSULTANTS

2725 Northwest Walnut Boulevard, Corvallis, Oregon 97330
Phone: 541-230-1790 ♦ www.west-inc.com

TECHNICAL MEMORANDUM

DATE: August 23, 2023

TO: Brant Ivey, Avangrid Renewables, LLC

FROM: Bryan Reiley and Andrea Chatfield, Western EcoSystems Technology, Inc.

RE: Final 2023 Washington Ground Squirrel (*Uroditellus washingtoni*) Survey Report for the Leaning Juniper IIA and IIB Wind Power Facility, Gilliam County, Oregon

INTRODUCTION

Leaning Juniper Wind Power II, LLC (LJWP), a wholly owned subsidiary of Avangrid Renewables, LLC operates the Leaning Juniper IIA and IIB Wind Power Facility (Project; LJIIA or LJIIB) in Gilliam County, Oregon. Western EcoSystems Technology, Inc. (WEST) was contracted by LJWP to conduct Washington ground squirrel (WGS; *Uroditellus washingtoni*) surveys per conditions in the Wildlife Monitoring and Mitigation Plan (WMMP) that was included in the 2009 Site Certificate, as amended (Energy Facility Siting Council [EFSC] 2015). Starting in 2017, the amended WMMP required periodic monitoring of historic WGS colonies every three years for the life of the Project. Per the WMMP, WGS surveys were conducted at the Project in 2017 (Gerhardt and Kronner 2017) and in 2021 (delayed by one year due to the COVID-19 pandemic; Jansen and Parrot 2021). This memorandum describes the 2023 survey methodology and associated monitoring results in compliance with Permit Conditions #87 and #88 of the Final Order of the Site Certificate, and WMMP, as amended (LJWP 2009, EFSC 2015).

STATUS AND NATURAL HISTORY

A small rodent endemic to the Columbia Plateau, WGS is no longer considered a federal candidate for listing but is a state-listed endangered species¹ in Oregon due to the reduced number of historic sites and distribution within the state (US Fish and Wildlife Service 2016, Oregon Department of Fish and Wildlife 2021).

WGS has an annual cycle characterized by a relatively short active period when all foraging, social, and reproductive activity takes place (Sato 2012). This period is followed by a longer period of dormancy when animals live off accumulated fat reserves while hibernating in underground burrows (estivation). In Oregon, adult WGS begin to emerge from winter hibernation between late January and early February (Sherman 2000). Young emerge from natal burrows as early as mid-

¹ Oregon Administrative Rule 635-100-0105.

March (Sherman 1999). The peak activity period is estimated to occur from the second week of April through the first week of May (Goodman 2003). Some sites may be noticeably active before and after these dates. Site-specific differences in chronology of activity levels do occur even among sites close in proximity (Goodman 2003). Peak activity occurs after the young have emerged. Active sites are most obvious currently because of heightened visual and audio detections, fresh digging, and/or fresh droppings (Goodman 2003). Typically, if the survey is conducted during peak activity periods, vocalizations can be expected if the site is active, although WGS in small, dispersed sites may not always be vocal (Goodman 2003). Estivation is initiated at many sites by early June and accurate site delineation becomes impractical. Soil type is an important component of habitat selection and burrow integrity (Finger et al. 2007). Shrub-steppe habitat over deep silty loam soils, particularly Warden and Sagehill soils, are typically used (Rickart and Yensen 1991, Marr 2001, Morgan 2002, Marr 2004). Surveys at the Montague Wind Facility, adjacent to the Project and the Boardman Bombing Range, located further east, found associations with Warden, Sagehill, Willis, and Olex soils and dense sagebrush (*Artemisia* spp.) cover (Greene et al. 2009, Kronner 2009).

SURVEY METHODS

To facilitate the 2023 survey effort, spatial data from previous survey efforts were obtained and mapped (Gritski et al. 2008, Gritski 2010, Downes et al. 2012, Downes and Gritski 2014, Gerhardt and Kronner 2017, Jansen and Parrot 2021).

WGS surveys consisted of pedestrian transect surveys at historical ‘areas of use’ documented at the Project during pre-construction WGS surveys (Gritski et al. 2008, Gritski 2010) and a surrounding 500-foot (ft; 152-meter [m]) buffer. This included nine sites at LJIIA and 10 sites at LJIIB (Survey Area; Gerhardt and Kronner 2017). Overlap of adjacent 500-ft buffers resulted in six areas of use in LJIIA and four areas of use in LJIIB (Figure 1). The term ‘area of use’ is analogous to a group of burrows that form a colony or site. Consistent with prior monitoring in 2017 and 2021, biologists determined the current habitat suitability for ground squirrels at each Survey Area and recorded land use activity along with any evidence of Project-related conditions that might increase erosion or result in a decline in vegetation quality, thus adversely affecting a ground squirrel colony or its activity (LJWP 2009, EFSC 2015). Habitat within areas of use that were converted from shrub-steppe to dryland wheat (*Triticum aestivum*) and classified as unsuitable ground squirrel habitat in 2017 and 2021 were excluded from 2023 surveys.

The survey protocol followed guidance within the WMMP, and methods outlined by Morgan and Nugent (1999) who describe sample techniques in areas where squirrel occupancy is unknown, and Goodman (2003) which is used in areas of known historical sites. Two rounds of surveys were conducted in mid-April through mid-June 2023. In the field, one biologist walked parallel meandering transects spaced approximately 196 ft (60 m) apart. To enhance the likelihood of detection, transects were oriented north-south the first round and east-west the second round. If an active burrow, historic burrow, or sign of squirrel was detected (see *Active Site*, below), the area within a 49-ft (15-m) radius of the point was searched for additional sign. If no sign was detected within the 49-ft radius area, radial transects spaced approximately 49 ft apart from the

initial burrow entrance were surveyed to the edge of the Survey Area, marking all burrows detected. The process continued until the outer-most burrows were identified, thus, delineating the furthest extent of the area of use. When documentation of all burrows was complete, parallel surveys continued along the same direction as before. Squirrel activity at the burrow followed Finger et al. (2007) and was defined as follows:

- Active Site—Confirmation of ground squirrel activity that includes observation of adults or juveniles, hearing alarm calls or other vocalizations, droppings outside of a freshly used burrow. Tracks or disturbed soil at burrow entrance, clipped vegetation, fresh droppings, absence of spider webs at the burrow entrance, or intact burrow walls were all signs indicative of freshly used burrows.
- Inactive Site—During both rounds of surveys, transects were completed in the colony and no sign of individuals or evidence of burrows were observed.
- Unconfirmed Site—No ground squirrel activity was confirmed during transect surveys; however, typical ground squirrel-sized burrows occur at the site that ranged between 2.25–2.75 inches (5.71–7.00 centimeters) in diameter.

Surveys were conducted from sunrise until early afternoon, after which time aboveground squirrel activity typically diminishes (Morgan and Nugent 1999). Surveys were postponed if wind gusts exceeded 20 miles per hour (32 kilometers per hour) due to issues with audio detection.

To delineate areas of use, burrow locations were imported into a geographic information system and each of the burrows was buffered by 49 ft and connected to form a polygon. The area of the polygon was calculated and the level of use at a site was classified according to the density of active burrows as described by Gerhardt and Kronner (2017) and implemented during pre-construction studies:

- Absent—No active burrows detected during either survey round.
- Very Low Use—less than one active burrow per hectare (ha; 2.50 acre [ac])
- Low Use—1–5 active burrow(s) per ha
- Medium Use—5–25 active burrows per ha
- High Use—25 or more active burrows per ha
- Very High Use—250 or more active burrows per ha

RESULTS

Biologists conducted two rounds of pedestrian transect surveys within the Survey Area with surveys at LJIIA conducted June 8 and 22, 2023, and survey at LJIIIB conducted on April 18 and May 16, 2023. Habitat suitability for WGS within the 500-ft buffer of the historical areas of use were like 2017 and 2021 conditions; though there were additional disturbances within the LJIIA Survey Area associated with a new gravel road (approximately 0.29 ha [0.72 ac]; Site 1) and an expansion of the borrow pit (approximately 4.90 ha [12.10 ac]; Site 4c) associated with the adjacent landfill (Figure 2). Areas with unsuitable land cover at LJIIIB (i.e., all of sites 14 and 23

and most of sites 13 and 15; Figure 3) that were excluded from 2017 and 2021 surveys were verified as cropland and excluded from 2023 surveys.

No evidence of WGS was detected during either survey round within LJIIA Survey Area and all nine historical areas of use were determined to be absent (Table 1, Figure 2). The absence of any detection of burrows within the LJIIA Survey Area suggests these areas are no longer occupied by WGS. This is corroborated by previous years surveys where surveys conducted for LJIIA in 2017 and 2021 also found no evidence of WGS occupancy at any of the nine site (Gerhardt and Kronner 2017, Jansen and Parrot 2021) and surveys in 2011 and 2014 found all but one (Site 6; Figure 2) to be inactive (Downes et al. 2012, Downes and Gritski 2014). During the 2017 surveys, Gerhardt and Kronner (2017) noted that areas of LJIIA previously occupied by WGS saw an increase in vegetative density over the years making these areas less suitable for use by WGS.

At LJIIIB, approximately 34 ground squirrel burrows were documented within the Survey Area including 20 burrows at sites 16–17 and approximately 14 burrows at sites 22a–b and 24 (Table 1, Figure 3). Of the 34 burrows, droppings, tracks, fresh excavation, or calls were seen at or near all burrows (Photos 1–3). Consistent with the approach described by Gerhardt and Kronner (2017), each burrow was buffered by 49 ft, resulting in a 0.88-ha (2.18-ac) area of use at the Survey Areas associated with sites 16–17 and a 0.56-ha (1.38-ac) area of use within the Survey Area associated with sites 22a–b and 24 (Figure 3). The 2023 areas of use at both sites are classified as High Use areas, with each containing approximately 25 burrows per ha. The majority of soils within the Survey Area consisted of Olex gravelly silt loam followed by Willis silt loam (Natural Resources Conservation Service 2021).

The location and extent of WGS activity documented at LJIIIB in 2023 was like that recorded in 2017 but represents a 26% increase in area of use compared with the most recent 2021 surveys. In 2021, WGS burrows were recorded only within the Survey Area associated with sites 16–17, resulting in a 1.14-ha (2.81-ac) area of use (Jansen and Parrot 2021) compared with the 1.44 ha (3.56 ac) during the 2023 survey effort.

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Table 1. Results of 2023 Washington ground squirrel (WGS) surveys conducted on April 18, May 16, June 8, and June 22, 2023, at the Leaning Juniper Wind Power Project, Gilliam County, Oregon.

Site Name	Survey Dates	Site Occupancy ¹	Land Cover Type	Comments
1	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
4a–c	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
4d–e	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
5	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
6	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
8	6/8/2023; 6/22/23	Inactive	Sagebrush Shrub-steppe	–
13	4/18/2023; 5/16/2023	Inactive	Cropland/Sagebrush Shrub-steppe	–
15a–b	4/18/2023; 5/16/2023	Inactive	Cropland/Sagebrush Shrub-steppe	–
16–17	4/18/2023; 5/16/2023	Active	Sagebrush Shrub-steppe	Approximately 20 WGS burrows and vocalizations detected.
22a–b,24	4/18/2023; 5/16/2023	Active	Sagebrush Shrub-steppe	10–15 WGS burrows and vocalizations detected.

¹ **Active Site** – Confirmation of ground squirrel activity which includes observation of adults or juveniles, hearing alarm calls or other vocalizations, droppings outside of a freshly-used burrow. Tracks or disturbed soil at burrow entrance, clipped vegetation, fresh droppings, absence of spider webs at the burrow entrance, or intact burrow walls were all signs indicative of freshly used burrows. **Inactive Site** – During both rounds of surveys, transects were completed in the colony and no sign of individuals or evidence of burrows were observed. **Unconfirmed Site** – No ground squirrel activity was confirmed during transect surveys; however, typical ground-squirrel sized burrows occur at the site which ranged between 2.25–2.75 inches (5.71–7.00 centimeters) in diameter.

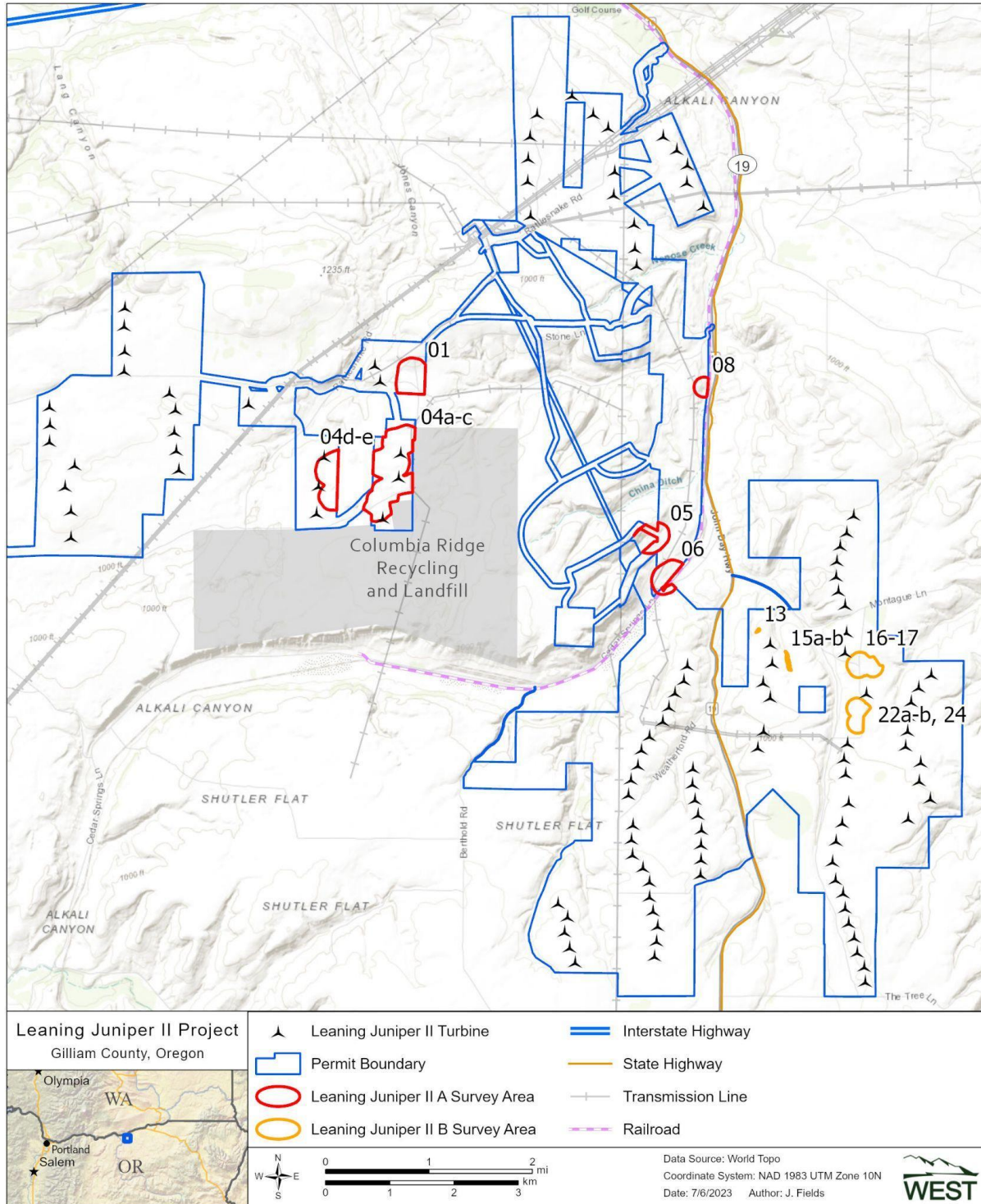


Figure 1. Vicinity map of the Washington ground squirrel Survey Areas at the Leaning Juniper IIA and IIB Wind Power Facility in Gilliam County, Oregon.

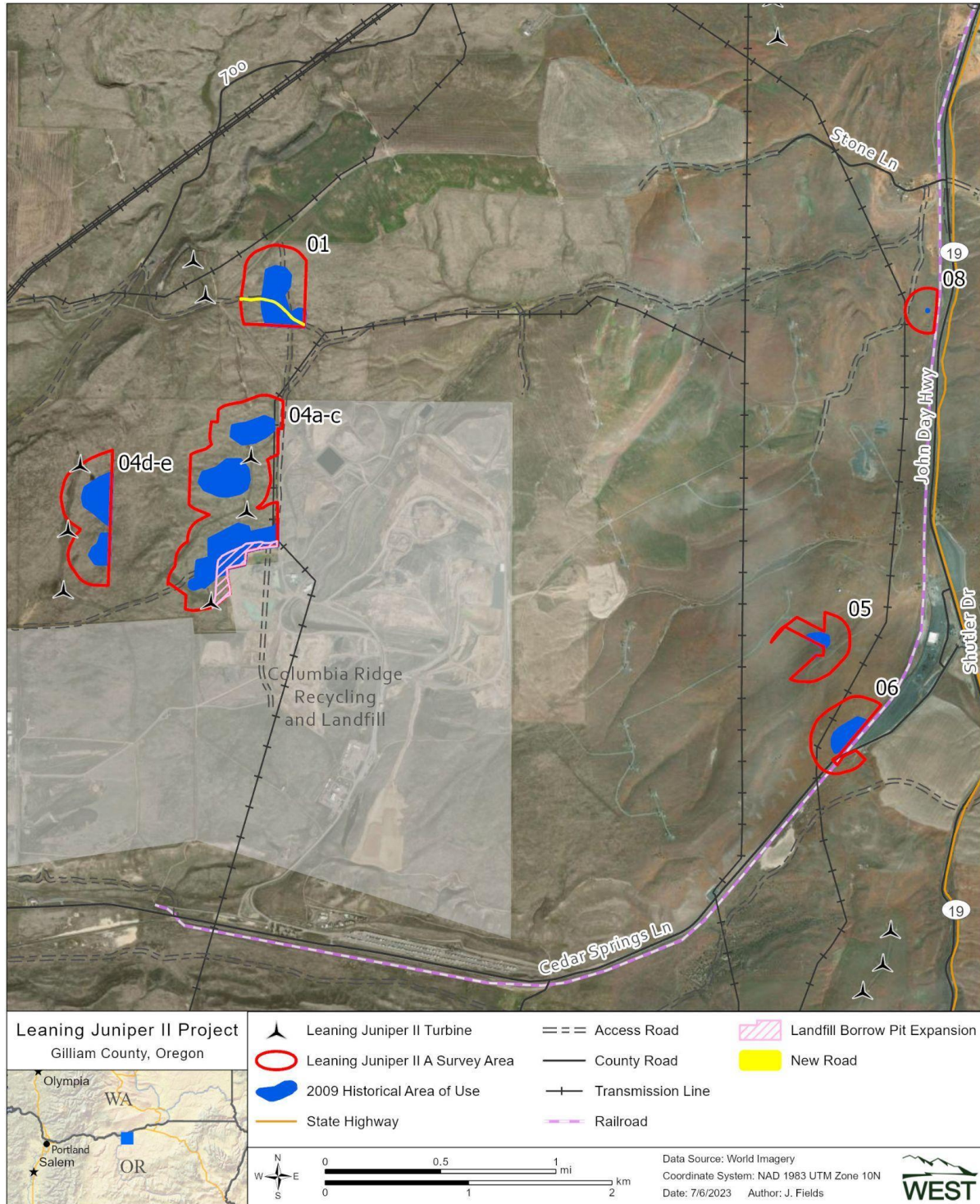


Figure 2. Washington ground squirrel Survey Areas and historical areas of use documented pre-construction at the Leaning Juniper IIA Wind Power Facility in Gilliam County, Oregon.

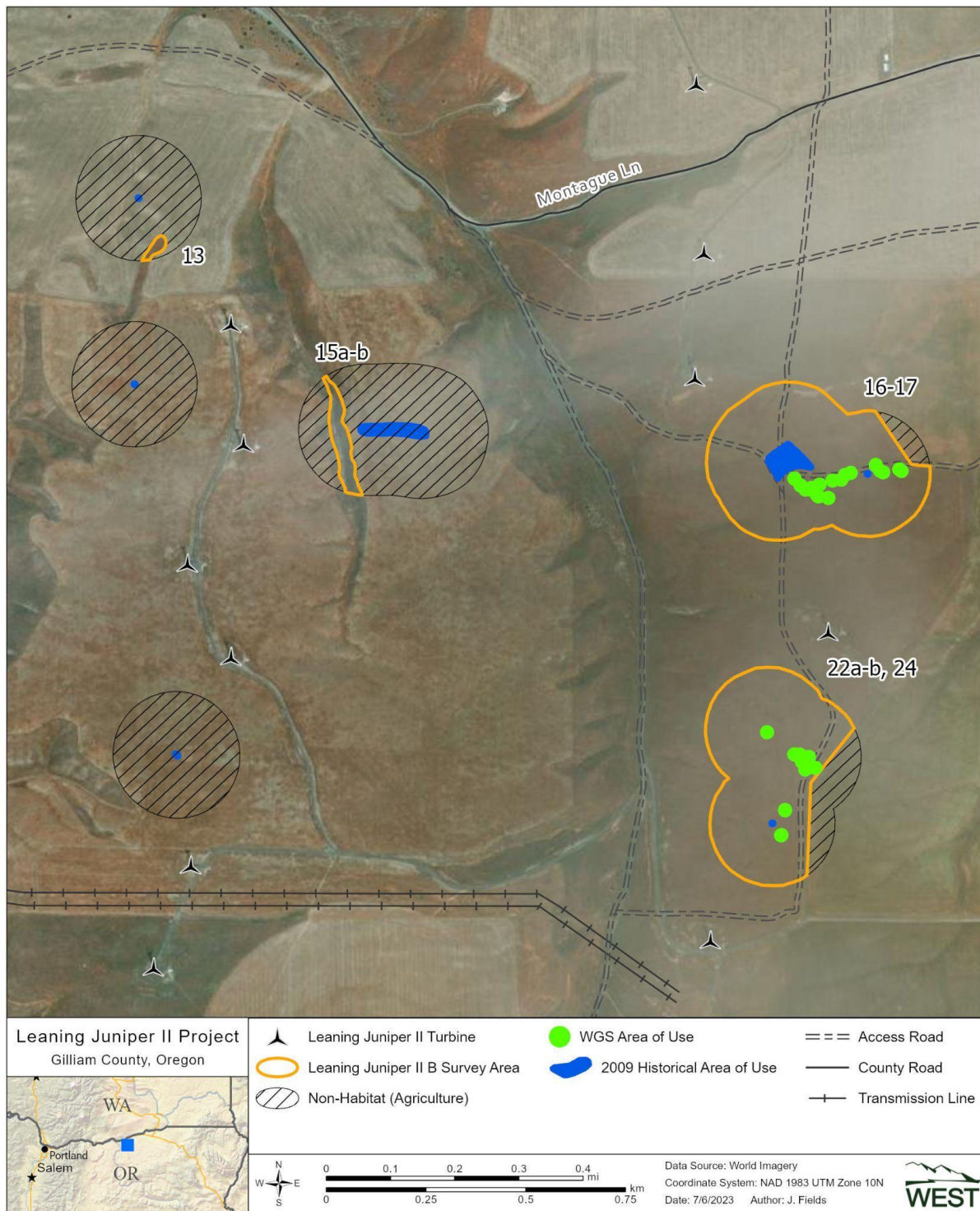


Figure 3. Washington ground squirrel Survey Areas, historical areas of use, and contemporary detections at the Leaning Juniper IIB Wind Power Facility in Gilliam County, Oregon.



Photo 1. Facing west into the Project from Survey Area 16–17 where most burrows were located at the Leaning Juniper IIB Wind Power Facility in Gilliam County, Oregon.



Photo 2. Facing northwest into the Project from Survey Area 22a–b at the Leaning Juniper IIB Wind Power Facility in Gilliam County, Oregon.



Photo 3. Active Washington ground squirrel burrow at Survey Area 22a–b, Leaning Juniper IIB Wind Power Facility in Gilliam County, Oregon.