### **Exhibit P**

### Fish and Wildlife Habitats and Species

West End Solar Project October 2022

Prepared for EE West End Solar LLC

Prepared by



Tetra Tech, Inc.



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### **List of Attachments**

Attachment P-1. West End Solar Project Washington Ground Squirrel Habitat Memo

Attachment P-2. 2019-2020 Botanical and Wetland Survey Report

Attachment P-3. 2019-2020 Wildlife and Habitat Survey Report

Attachment P-4. Draft Noxious Weed Control Plan

Attachment P-5. Draft Habitat Mitigation Plan

### **Acronyms and Abbreviations**

Applicant EE West End Solar LLC

BGEPA Bald and Golden Eagle Protection Act

GIS
Geographic Information System
NHD
National Hydrography Dataset
NLCD
National Land Cover Database
NWI
National Wetlands Inventory
O&M
operations and maintenance
OAR
Oregon Administrative Rules
OCS
Oregon Conservation Strategy

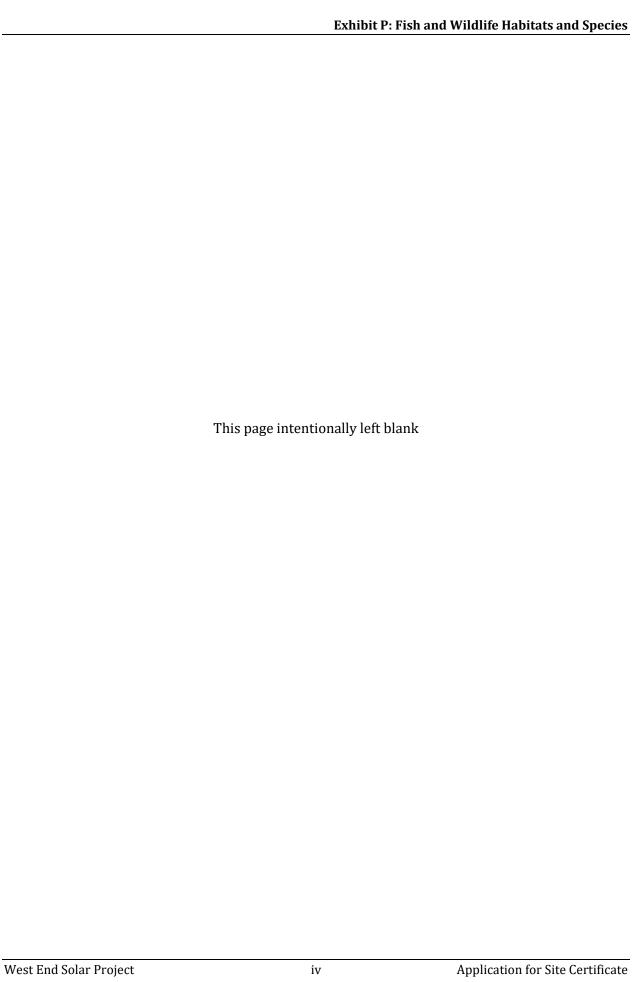
ODFW Oregon Department of Fish and Wildlife

ODOE Oregon Department of Energy

ORBIC Oregon Biodiversity Information Center

Project West End Solar Project

UEC Umatilla Electric Cooperative
USFWS U.S. Fish and Wildlife Service
WAGS Washington Ground Squirrel



### 1.0 Introduction

EE West End Solar LLC (Applicant), a subsidiary of Eurus Energy America Corporation, proposes to construct the West End Solar Project (Project), a solar energy generation facility and related or supporting facilities in Umatilla County, Oregon. Exhibit P was prepared to meet the submittal requirements in Oregon Administrative Rules (OAR) 345-021-0010(1)(p). The major components of the Project are the solar arrays (composed of solar modules), collector line system, energy storage system, Project's collector substation, switchyard substation, operations and maintenance (0&M) enclosure, and access roads. The Applicant anticipates approximately 300,000 modules, which will vary depending on the final technology and layout selected. There are two existing transmission line rights-of-way that run southeast to northwest through the Site Boundary: Bonneville Power Administration's McNary to Roundup 230-kilovolt (kV) line and PacifiCorp's Pendleton to Hermiston 69-kV line. In addition, there is a Umatilla Electric Cooperative (UEC) 115kV line that parallels the eastern edge of the Site Boundary. All three existing transmission lines provide interconnection capabilities within or immediately adjacent to the Site Boundary, eliminating the need for a Project transmission line. Although it is anticipated that interconnection will occur at the UEC 115-kV line, the Applicant seeks interconnection micrositing flexibility for all or part of the Project to the Umatilla Electric Cooperative, Bonneville Power Administration, and PacifiCorp transmission lines.

Exhibit P provides information about the fish and wildlife habitats and species that could be affected by the Project; threatened and endangered species are addressed in Exhibit Q.

### 1.1 Analysis Area

The Analysis Area for fish and wildlife habitat is the Site Boundary plus a 0.5-mile buffer, as defined by OAR 345-001-0010(59)(c). The Site Boundary is defined in detail in Exhibits B and C. The Fish and Wildlife Habitat Analysis Area is shown on Figure P-1. The Applicant performed field surveys within the Site Boundary, as well as portions of the 0.5-mile buffer for some resources; desktop analysis was used to understand the area outside the Site Boundary but within the Analysis Area where not visited during field surveys.

### 1.2 Agency Consultation

The Applicant has consulted with Oregon Department of Fish and Wildlife (ODFW) and Oregon Department of Energy (ODOE) personnel regarding fish and wildlife habitat survey requirements and outcomes as well as potential impacts from the Project. Consultation began in February 2019 and is ongoing, as follows:

Preliminary virtual discussion on February 12, 2019 between the Applicant and ODFW
(Greg Rimbach) to discuss anticipated biological surveys including a 0.5-mile buffer for
raptor nesting and a 1000-foot buffer for Washington Ground Squirrels (WAGS).
 Landowner access permission for select parcels outside the Site Boundary was not available

so ODFW requested a desktop review of WAGS habitat suitability in these inaccessible areas (see Attachment P-1).

- In March 2020, the Applicant coordinated with ODFW (Greg Rimbach) via email regarding the timing and extent of WAGS surveys and raptor nest surveys. The Applicant received concurrence from ODFW on 2020 biological survey timing, as well as the exclusion of area east of the two-lane paved S Edwards Road from WAGS surveys because the road is a habitat barrier.
- The Applicant met with ODFW (Greg Rimbach) and ODOE (Kellen Tardaewether) on June 9, 2021 to discuss survey results and potential mitigation options. ODFW noted that the Project was well located and the perimeter fence was not likely to interrupt any wildlife corridors given the nature of the wildlife use of the area, and the surrounding agricultural land use.

# 2.0 Description of Biological and Botanical Surveys PerformedOAR 345-021-0010(1)(p)(A)

OAR 345-021-0010(1)(p) Information about the fish and wildlife habitat and the fish and wildlife species, other than the species addressed in subsection (q) that could be affected by the proposed facility, providing evidence to support a finding by the Council as required by OAR 345-022-0060. The applicant must include:

 $OAR\ 345-021-0010(1)(p)(A)$  A description of biological and botanical surveys performed that support the information in this exhibit, including a discussion of the timing and scope of each survey.

This section describes the biological and botanical surveys conducted in support of this exhibit as required under OAR 345-021-0010(1)(p)(A), including the timing and scope of each survey. Biological and botanical surveys included an initial desktop information review followed by field surveys.

### 2.1 Desktop Review

Prior to conducting field surveys in 2019 and 2020, the Applicant conducted a desktop review to identify special-status wildlife and plant species with the potential to occur at the Project, including federal and state endangered, threatened, proposed, and candidate species; species of concern; birds of conservation concern; sensitive and sensitive-critical species; and Oregon Conservation Strategy species (OCS 2016, ODFW 2016, ODFW 2018, ORBIC 2016, ORBIC 2018, ORBIC 2019, USFWS 2008, USFWS 2019a, USFWS 2020a, Wildlife Explorer 2020).

The Applicant reviewed publicly available sources and compiled habitat information, land use classification, and locations of fish and wildlife habitat conservation areas to determine suitability for special-status species with the potential to occur in the Project vicinity. Wetlands and waters desktop information was also reviewed to determine habitat potential for special-status species

within the Analysis Area. Aerial photography and topographic maps were also reviewed to assess existing habitat. In addition to reviewing publicly available sources, the Applicant submitted a request to the Oregon Biodiversity Information Center (ORBIC) to obtain site-specific records of special-status species occurrences and sensitive habitats within 2 miles of the Project (ORBIC 2018). Sources of information included the following:

- U.S. Fish and Wildlife Service (USFWS) threatened, endangered, and candidate species lists for Umatilla County (USFWS 2019b, USFWS 2020a);
- ORBIC's list of Oregon's rare, threatened, and endangered species (ORBIC 2019);
- Threatened, endangered, and candidate fish and wildlife species in Oregon (ODFW 2018, ODFW 2021a);
- ODFW sensitive species list (ODFW 2016, ODFW 2021b);
- ORBIC database of known occurrences of target plant and animal species within the vicinity of the Site Boundary (ORBIC 2018);
- Oregon threatened, endangered, and candidate plants (ODA 2019);
- The Oregon Flora Project (OFP 2019a, OFP 2019b);
- The PLANTS Database (NRCS 2019a);
- Gap Analysis Project /LANDFIRE National Terrestrial Ecosystems data (USGS 2011);
- USFWS National Wetlands Inventory (NWI) (USFWS 2019c, USFWS 2020b);
- U.S. Geological Survey National Hydrography Dataset (NHD) (USGS 2017);
- National Land Cover Database (NLCD; Homer et al. 2015);
- NW Regional Gap Analysis Project (Aycrigg et al. 2013);
- Oregon Conservation Strategy (OCS 2016);
- StreamNet fish distribution (StreamNet 2018),
- Google Earth Pro West End Solar Project Area (Google Earth Pro 2019, Google Earth Pro 2020); and
- Web Soil Survey (NRCS 2019b, NRCS 2020).

### 2.1.1 Washington Ground Squirrel Desktop Review

The Applicant conducted a desktop review of potential Washington ground squirrel (WAGS) habitat in areas that were outside the Site Boundary, but which were within 1,000 feet of and contiguous with potential ground disturbing activities, but were not accessible (no access granted) for field surveys in 2019 or 2020 (Tetra Tech 2020a; Attachment P-1). Based on coordination with ODFW, the Applicant reviewed aerial photographs, Natural Resources Conservation Service soil data, and the results of a records query to ORBIC in the Project vicinity. The Applicant additionally viewed

these areas from within accessible portions of the Analysis Area and public roads to identify the likely habitat type. The results of this review were drafted in a memo to ODFW in September 2020, included in this Application for Site Certificate as Attachment P-1.

### 2.2 Field Surveys

This section describes the biological and botanical surveys conducted in support of this exhibit as required under OAR 345-021-0010(1)(p)(A), including the timing and scope of each survey (Table P-1). Biological and botanical surveys included an initial desktop-level review, followed by field surveys.

Table P-1. Summary of Field Surveys Conducted within the Analysis Area between 2019 and 2020

Survey	Year	Reference	Extent
Washington ground squirrel surveys	2019-2020	Tetra Tech 2020b	Site Boundary plus 1,000-foot buffer in suitable Washington ground squirrel habitat where accessible and not separated from proposed ground disturbance by a habitat barrier.
Habitat categorization surveys	2019-2020	Tetra Tech 2020b	Site Boundary
Raptor nest survey	2019-2020	Tetra Tech 2020b	Analysis Area
Botanical surveys	2019-2020	Tetra Tech 2020c	Site Boundary
Wetlands and waters surveys	2019-2020	Tetra Tech 2020c	Site Boundary

### 2.2.1 Washington Ground Squirrel Surveys

On April 22 and 23, May 21 and 22, 2019, and March 22, May 9 and 10, 2020, the Applicant conducted WAGS surveys on 349 acres within the Analysis Area (Figure P-2). In the field, surveyors verified the status of Category 6 habitat identified during desktop review, and mapped active agricultural areas and developed areas, including a water treatment pond, as well as areas separated from the Site Boundary by a habitat barrier. The Category 6 areas were confirmed as not suitable for WAGS and were therefore excluded from field surveys. Due to access restrictions outside the Site Boundary, areas of potentially suitable WAGS habitat within the 1,000-foot buffer were not surveyed (approximately 39 acres); this habitat not accessible during field surveys but contiguous with the Site Boundary is analyzed for suitability to WAGS in a separate memo (Attachment P-1).

WAGS field surveys involved a team of surveyors walking linear transects spaced 165 to 230 feet apart, documenting and mapping WAGS and their sign. The surveys generally followed methodology developed in the Status and Habitat Use of the WAGS on State of Oregon Lands (Morgan and Nugent 1999). Potential habitat was surveyed twice during the survey period; surveys

were conducted at least 2 weeks apart. The WAGS protocol requires two phases of surveys to increase the likelihood of detecting their presence. The first phase of surveys begins as early as late March or early April, with the next phase following at least 2 weeks later and completed by the end of May or early June, to assure surveys are conducted prior to WAGS going into aestivation.

#### 2.2.2 Botanical Surveys

The Applicant conducted surveys for botanical resources and wetland and waters on July 3, 2019, and June 22, 2020 (Attachment P-2). The survey schedule was chosen to cover the identification period for Laurence's milkvetch (*Astragalus collinus* var. *laurentii*) and Dwarf evening-primrose (*Eremothera* [*Camissonia*] *pygmaea*). The survey period also coincided with the identification period for the majority of the ORBIC-tracked species that have the potential to occur at the Project. Although the survey period was out of the recommended identification period for sessile mousetail (*Myosurus sessilis*), this species' vernal pool habitat was considered unlikely to occur in the Site Boundary, and no vernal pools were observed within the Site Boundary during field surveys. Additionally, depending on the year, sessile mousetail is sometimes identifiable through early July.

Botanical field surveys were conducted within the entire 324-acre Site Boundary using the Intuitive Controlled survey method, a standard and commonly accepted survey protocol (USFS and BLM 1998). This method incorporates meandering transects that traverse the site, and that target the full array of major vegetation types, aspects, topographical features, habitats, and substrate types. While en route, the surveyors search for target species, and when the surveyors arrive at an area of high potential habitat (that was defined in the pre-field review or encountered during the field visit), they conduct a complete survey for the target species. Complete surveys include an examination of 100 percent of the habitat.

During surveys, the Applicant maintained a running list of vascular plant species encountered and made informal collections of unknown species for later identification. Identification was verified by the use of appropriate plant keys; in particular, Flora of the Pacific Northwest (Hitchcock and Cronquist 2018). For quality control, species identifications were compared against location records of known observations and vouchered specimens (OFP 2019a, OFP 2020). Nomenclature follows the Angiosperm Phylogeny Group III system, as used by the Oregon Flora Project (OFP 2019c). The final vascular plant species list and noxious weed occurrence for the Site Boundary is included in Attachment P-2.

### 2.2.3 Wetlands and Waters Surveys

Concurrent with the botanical surveys, the Applicant also surveyed the Site Boundary for the presence of wetlands and other waters (Attachment P-2). Wetland presence was assessed per methods in the *Wetlands Delineation Manual, Technical Report Y-87-1* (USACE 1987) and *the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0;* USACE 2008). As noted in these manuals, three field indicators of wetlands (hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to make a positive wetland determination. The presence of non-wetland waters was assessed based on methods described in

the Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008). Wetlands and non-wetland waters are discussed in Exhibit J.

### 2.2.4 Habitat Categorization Surveys

On May 21 and 22, 2019, and May 9 and 10, 2020, the Applicant completed habitat categorization surveys within the entire Site Boundary, concurrent with WAGS surveys, as discussed and approved in a conference call with Greg Rimbach of ODFW and the Applicant (ODFW 2019, ODFW 2020). The objective of the surveys was to categorize habitat within the Site Boundary (Figures P-3 and P-4, Attachment P-3) per the habitat categories set forth in OAR 635-415-0025. Habitat types and categories were noted outside the Site Boundary and within the Analysis Area when these areas were traversed (where accessible) for the purposes of documenting other resources (i.e., WAGS and raptor nests). Habitat boundaries were digitized using GPS-enabled tablets, and information on habitat such as dominant vegetation, existing disturbance, and any sensitive species or habitat features observed were collected.

In the field, the Applicant delineated areas of relatively homogenous vegetation and characterized the composition and structure of habitat, with a minimum mapping unit of 1-acre. Each delineated vegetation polygon was assigned a habitat type, subtype, and habitat quality category guided by the habitat categorization table. Data characterizing a particular habitat type and quality represented the average condition of all such polygons.

### 2.2.5 General Wildlife Surveys

The Applicant reviewed habitat and range information for special-status wildlife species known to occur in Umatilla County and the Columbia Plateau/Columbia Basin to develop the list of species that had the potential to occur at the Project (Section 4.1 of this exhibit). Species were eliminated from consideration if their habitat was absent from the Site Boundary, or their range did not overlap with the Site Boundary. The list includes state-sensitive species associated with habitat types identified during the preliminary desktop review and the October 2018 site visit, including the long-billed curlew (*Numenius americanus*), sagebrush sparrow (*Artemisiospiza nevadensis*), and grasshopper sparrow (*Ammodramus savannarum*), as requested by ODFW (Tetra Tech 2018, ODFW 2019).

Concurrent with WAGS and habitat categorization surveys during April and May of 2019 and March and May of 2020, the Applicant documented general wildlife and special-status species use of the Site Boundary. Wildlife were noted outside the Site Boundary and within the Analysis Area when these areas were traversed (where accessible) for the purposes of documenting other resources (i.e., WAGS and raptor nests). Spring surveys coincide with the period of highest biological activity of neotropical migrant and breeding birds, foraging and breeding animal species, and other taxa. For instance, long-billed curlews arrive at the nearby Umatilla National Wildlife Refuge on March 15 each year, plus or minus 2 days (ODFW 2019), and were therefore likely to be detected during this timeframe if present in the Site Boundary.

### 2.2.6 Raptor Nest Surveys

Prior to conducting field surveys, the Applicant reviewed aerial photography and the results of a records request to ORBIC (2018) to identify potential raptor nesting structures in the vicinity of the Project. The Applicant conducted ground-based raptor nest surveys concurrent with the April 2019 and May 2020 WAGS surveys, to document active and inactive raptor nests within the Site Boundary plus an approximately 0.5-mile buffer as discussed with ODFW (Figure P-1, Attachment P-3; ODFW 2019). The Applicant drove public roads to search for raptor nests that were outside the Site Boundary, but which were within the 0.5-mile buffer, and walked to any potential nesting structures not visible from public roads, land access permitting. If a nest was found, the location was documented via GPS-enabled tablets, as well as nest status, size class, condition, substrate, height, exposure, as well as the nesting species and number of eggs or young, observed during surveys.

# 3.0 Identification and Description of Habitat – OAR 345-021-0010(1)(p)(B)(C)

OAR 345-021-0010(1)(p)(B) Identification of all fish and wildlife habitat in the analysis area, classified by the general fish and wildlife habitat categories as set forth in OAR 635-415-0025 and the sage-grouse specific habitats described in the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-140-0000 through -0025 (core, low density, and general habitats), and a description of the characteristics and condition of that habitat in the analysis area, including a table of the areas of permanent disturbance and temporary disturbance (in acres) in each habitat category and subtype.

 $OAR\ 345-021-0010(1)(p)(C)\ A$  map showing the locations of the habitat identified in (B).

### 3.1 Description of Habitat Types and Categories within the Analysis Area

Table P-2 describes habitat types, subtypes, and categories found within the Analysis Area, including the vegetation and other characteristics of each habitat subtype and category. During field surveys, the Applicant identified habitat that met the definitions for Category 3, 4, 5, and 6 habitats which is detailed in Attachment P-3. Figure P-3 shows Habitat Categories within the Analysis Area; Figure P-4 shows Habitat Subtypes within the Analysis Area. No category 1 or 2 habitat was identified during desktop analysis or field surveys. No wetlands and no stream features or other features that appear to convey water were identified within the Site Boundary during field surveys.

Table P-2. Habitat Types, Subtypes, and Categories within the Analysis Area

Habitat Type	Habitat Subtype	Category 3	Category 4	Category 5	Category 6
Upland Grassland, Shrub-steppe and Shrubland	Eastside Grasslands Grassland areas with few shrubs (not irrigated or cultivated/planted)	_	Highly disturbed habitat with a high percentage of non-native plant species (i.e., between 15 to 50% ground cover is native), or very highly disturbed habitats (i.e., less than 15% ground cover is native) that contain a sagebrush component.	Very highly disturbed habitats with a high percentage of non-native plant species (i.e., less than 15% ground cover is native), but which do not contain a sagebrush component.	-
	Shrub-steppe Grassland and shrubland mosaic	Habitat that is limited within the area (e.g., relatively undisturbed habitat); high degree of cover; moderate cover by weeds, moderate structure/forage for wildlife.	-	-	-
Agriculture, Pasture, and Mixed Environs	Orchards, Vineyards, Wheat Fields, Other Row Crops	-	-	-	Active agricultural areas with low potential for restoration.
Urban and Mixed Environs	Urban and Mixed Environs	-	-	-	All developed areas.

## 3.2 Quantity of Habitat Types and Habitat Categories within the Analysis Area

Table P-3 shows the acreages within the Analysis Area of each habitat subtype and habitat category. The location of each habitat subtype and category within the Analysis Area are shown on Figures P-3 and P-4, as directed by OAR 345-021-0010(1)(p)(C). Presence of a particular habitat category within the Analysis Area does not indicate that this habitat will necessarily be impacted by the Project. A table of the areas of permanent disturbance in each habitat category and habitat type are presented in Section 6.0 with the discussion on potential impacts to fish and wildlife habitat.

Table P-3. Acres of Habitat Subtypes and Habitat Categories within the Analysis Area

Habitat Type	Habitat Subtype	Acres in Analysis Area	ODFW Habitat Category				
	Shrub-steppe	20	3				
Upland Grassland, Shrub- steppe and Shrubland	Eastside Grassland	139	4				
steppe and our abland	Eastside Grassland	730	5				
Agriculture, Pasture, and Mixed Environs	Orchards, vineyards, wheat fields, other row crops	890	6				
Urban and Mixed Environs		16	6				
Total Acreage		1,796	-				
Note: Numbers may not appear to su	Note: Numbers may not appear to sum due to rounding.						

# 4.0 Identification of State Sensitive Species and Site-Specific ODFW Issues – OAR 345-021-0010(1)(p)(D)

OAR 345-021-0010(1)(p)(D) Based on consultation with the Oregon Department of Fish and Wildlife (ODFW) and appropriate field study and literature review, identification of all State Sensitive Species that might be present in the analysis area and a discussion of any site-specific issues of concern to ODFW.

### 4.1 Identification of State Sensitive Species

Based on the desktop analysis and field surveys (Section 2.0), 17 state sensitive species and two eagles species have potential to occur in the Analysis Area (Table P-4). State endangered, threatened, and candidate species are addressed in Exhibit Q. Six of these are sensitive-critical species and 11 are sensitive species in the Columbia Plateau Ecoregion (Table P-4). Of these 17 species, three were observed during field surveys: the grasshopper sparrow, long-billed curlew, and Swainson's hawk. While not state sensitive species, bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are addressed briefly in this document as a species of concern

protected under the Bald and Golden Eagle Protection Act (BGEPA). Fish and other species that require aquatic habitat (e.g., turtles) were determined not to have potential to occur based on an absence of wetlands and waters in the Analysis Area, and thus are not discussed further in this exhibit.

Table P-4. State Sensitive Species with the Potential to Occur within the Analysis Area

Common Name	Scientific Name	ODFW Status in Columbia Plateau <sup>1</sup>	Expected Habitat	Observed or Expected Occurrence within Analysis Area	Potential Use of Habitat within Analysis Area
Mammals					
hoary bat	Lasiurus cinereus	S	Found in forested upland habitats, including junipers. Long-distance migrant.	Not expected due to lack of habitat.	Probable transient during migration periods.
pallid bat	Antrozous pallidus	S	Caves/karst, desert scrub, grassland, and shrubland. Non-migratory.	Not expected due to lack of habitat.	Limited potential foraging habitat available.
silver-haired bat	Lasionycteris noctivagans	S	Associated with older Douglas-fir/western hemlock and ponderosa pine forests as well as juniper woodland habitat near streams, ponds and lakes. Roosts in tree cavities, under loose bark, caves, mines and in abandoned buildings. Long-distance migrant.	Not expected due to lack of habitat.	Limited foraging habitat available. Probable transient during migration periods.
spotted bat	Euderma maculatum	S	Uses crevices in cliffs, caves and canyon walls for day and nights roosts. Will also roost in trees at night and typically forage in meadows, shrub-steppe, or water sources. Regional migrant.	Not expected due to lack of habitat.	Limited foraging habitat available. Potential transient.
Townsend's big-eared bat	Corynorhinus townsendii	SC	Found in natural caves, mines, and buildings in the summer. Hibernates October to April in caves and mines. Regional migrant.	Not expected due to lack of habitat.	Limited foraging habitat available. Potential transient.

Common Name	Scientific Name	ODFW Status in Columbia Plateau <sup>1</sup>	Expected Habitat	Observed or Expected Occurrence within Analysis Area	Potential Use of Habitat within Analysis Area
Birds					
bald eagle	Haliaeetus leucocephalus	N/A	Nests in forested areas adjacent to large bodies of water. Nests in trees, rarely on cliff faces and ground nests in treeless areas. Known to scavenge opportunistically on carcasses in otherwise unsuitable habitat particularly during migration.	Not observed during surveys.	Potential scavenging and foraging habitat.
golden eagle	Aquila chrysaetos	N/A	Usually nests on cliffs but also can nest in trees. Breeds in open and semiopen habitats at a variety of elevations, in tundra, shrublands, grasslands, woodland-brushlands, and coniferous forests, farmland and riparian areas. Typically forages in open habitats like grasslands, areas with steppe-like vegetation.	Not observed during surveys.	Potential foraging habitat.
Brewer's sparrow	Spizella breweri	S	Abundant east of the Cascades in sagebrush communities.	Not observed during surveys.	Limited sagebrush habitat available.
burrowing owl	Athene cunicularia hypugaea	SC	Nests in earthen burrows in open shrub-steppe regions and grasslands.	Not observed during surveys.	Limited nesting and foraging habitat available.
common nighthawk	Chordeiles minor	S	Nests in open landscapes with little ground cover and is most abundant in sagebrush and rock scablands of eastern Oregon.	Not observed during surveys.	Limited nesting and foraging habitat available.
ferruginous hawk	Buteo regalis	SC	Occurs in the open landscapes east of the Cascades, most common in the foothills of the Blue Mountains. Nests on the ground or in lone or peripheral trees.	Not observed during surveys.	Foraging habitat available.

Common Name	Scientific Name	ODFW Status in Columbia Plateau <sup>1</sup>	Expected Habitat	Observed or Expected Occurrence within Analysis Area	Potential Use of Habitat within Analysis Area
grasshopper sparrow	Ammodramus savannarum	S	Prefers open grasslands, found in scattered colonies along unforested northern slopes of the Blue Mountains.	Individuals observed in Eastside grassland.	Breeding and foraging habitat available.
Lewis's woodpecker	Melanerpes lewis	SC	Formerly widespread in Oregon, it is currently common year-round only in the white oak-ponderosa pine belt east of Mt. Hood. It also breeds in low numbers in open habitat along east Oregon river and stream valleys.	Not observed during surveys.	Not Expected.
loggerhead shrike	Lanius ludovicianus	S	Breeds in open habitats east of the Cascades.	•	
long-billed curlew	Numenius americanus  SC  Locally common breeder in open grassland areas east of the Cascades. It is most abundant in the Columbia River basin.		Individuals observed during surveys in eastside grassland habitat.	Breeding habitat available.	
sagebrush sparrow	Artemisiospi- za nevadensis	SC	Widespread throughout the extensive shrub-steppe of eastern Oregon. Usually associated with big sagebrush.	Not observed during surveys.	Limited sagebrush habitat available.
Swainson's hawk	Buteo swainsoni	S	Prefers bunchgrass prairies of eastern Oregon and common in the foothills of the Blue Mountains. Nests typically in solitary tree, bush, or small grove.	Individuals observed foraging during surveys.	Foraging habitat available.
Reptiles					
California mountain kingsnake  Lampropeltis sonata  Lampropeltis S in, log		Pine forests, oak woodlands, and chaparral. Usually found in, under, or near rotting logs in open wooded areas near streams.	Not expected to occur.	Not expected.	

Common Name	Scientific Name	ODFW Status in Columbia Plateau <sup>1</sup>	Expected Habitat	Observed or Expected Occurrence within Analysis Area	Potential Use of Habitat within Analysis Area
northern sagebrush lizard	Sceloporus graciosus	S	Found in sagebrush habitat, but also chaparral, juniper woodlands, and coniferous forests.	Potential to occur as sagebrush habitat exists in the Analysis Area. However, sagebrush habitat is limited and therefore few individuals are expected to occur.	Limited sagebrush habitat available and no chaparral, juniper woodlands, or coniferous forests present.

Sources: ODFW Oregon Conservation Strategy (OCS 2016); ODFW Sensitive Species List 2021 (ODFW 2021).

### 4.2 Site Specific Issues Identified by ODFW

ODFW did not identify any site specific issues for the Project. During the consultation described in Section 1.2, ODFW noted that there are no known migratory elk or deer populations in the area, and that the Project is generally surrounded by agricultural land uses. Based on these observations, as well as the description of habitat and wildlife use of the Project provided by the Applicant and ODFW's viewing of the Project from public roads, ODFW did not recommend the inclusion of terrestrial wildlife corridors through the Project exclusion fencing.

## 5.0 Baseline Survey of Habitat Use by State Sensitive Species – OAR 345-021-0010(1)(p)(E)

OAR 345-021-0010(1)(p)(E) A baseline survey of the use of habitat in the analysis area by species identified in (D) performed according to a protocol approved by the Department and ODFW.

### 5.1 General Wildlife Surveys

State sensitive species observed during general wildlife surveys are shown on Figure P-5 and described in Table P-5, below.

<sup>1.</sup> ODFW Status: S = Sensitive Species, SC = Critical Sensitive Species.

Species	ODFW Status <sup>1</sup>	Number of Individual Observations Within Analysis Area <sup>2</sup>	Habitat Subtypes Where Observed
grasshopper sparrow Ammodramus savannarum	S	3	Eastside Grassland (3)
Swainson's hawk Buteo swainsoni	S	6	Eastside Grassland (5), Shrub- steppe (1)
long-billed curlew Numenius americanus	SC	3	Eastside Grassland (3)

Table P-5. Special-Status Wildlife Species Observed During Surveys

The probability of detection of individual species is dependent on many factors including activity patterns of the species, timing of surveys, amount of time surveyors were present in a particular area, and detectability of the species. The number of observations for each species shown on Figure P-5 should not be interpreted as a measure of the number of individuals present within the Analysis Area. It is the number of independent observations of a species, with multiple individuals tallied when observed together. Independent observations could represent repeated observations of the same individual at different times.

### 5.2 Raptor Nest Surveys

During raptor nest field surveys, the Applicant did not document any active or inactive raptor nests within 0.5 miles of the Site Boundary.

The Applicant was able to view the full extent of the Analysis Area from public roads and accessible parcels; however, it is possible that active nests may have been out of view of surveyors due to factors such as distance, visibility, and access. However, raptor activity such as adult raptors travelling to and from active nests is often visible from a distance, and no such activity was observed. No records of nesting raptors within the 0.5 miles of the Site Boundary were returned from the ORBIC (2018) request.

### 6.0 Description of Potential Adverse Impacts – OAR 345-021-0010(1)(p)(F)

OAR 345-021-0010(1)(p)(F) A description of the nature, extent and duration of potential adverse impacts on the habitat identified in (B) and species identified in (D) that could result from construction, operation and retirement of the proposed facility.

This section describes potential impacts to habitat and state sensitive species that are known to occur or have the potential to occur within the Analysis Area. Permanent impacts to fish and wildlife habitat are discusses as well as disturbance impacts to mammals, birds, and reptiles.

<sup>1.</sup> SC = Sensitive-Critical Species, S = Sensitive Species

<sup>2.</sup> The number of observations shown tallies multiple individuals per location in some instances.

### 6.1 Potential Impacts to State Sensitive Species

This section addresses potential impacts to state sensitive species identified in Section 4.0. Habitat modification resulting from construction activities will occur in permanent impact areas, and the associated impacts will vary by species. In addition to these habitat-related impacts (e.g., habitat loss and modification), potential adverse impacts to sensitive species due to construction and operation may include the introduction of noxious weeds and other non-native invasive species, potential nesting and breeding disturbance, structure collision, vehicular collision, disturbance related to artificial lighting, and entrapment within open vertical pipes.

#### **6.1.1** *Mammals*

Five state sensitive bat species have the potential to occur within the Analysis Area: hoary bats, pallid bats, silver-haired bats, spotted bats, and Townsend's big-eared bats. However, Site Boundary is not located within maternal or roosting habitat for these species (Table P-4). Also, foraging habitats such as wetlands and waters do not occur within the Site Boundary. Additionally, construction activities will generally occur during daylight hours when bats are generally absent, and thus construction activities are not anticipated to disturb foraging bats.

Any impacts to bats that do occur would likely be limited to late summer and fall, during the migratory period for tree-roosting bats. Post-construction bat mortality data at utility scale photovoltaic solar energy sites are limited; however, three publicly available studies from California sites have reported small numbers of bat carcasses found both during fatality searches and incidentally (WEST 2017). Data from non-photovoltaic solar facilities with higher bat fatalities reported (e.g., a power-trough facility in California) suggest that the timing of potential bat fatalities at solar facilities is primarily in late summer and fall. While cause of mortality in these studies is generally inconclusive based on the condition of the carcasses when found, some of these may be due to collision with facility infrastructure. Insects may be attracted to lighting around structures, which may in turn attract bats to forage near facility infrastructure. Thus, artificial lighting at night may increase the risk of collision fatalities. However, the potential for collision risk due to artificial night lights will be avoided and minimized, as described in Section 7.0. As a result, construction and operation of the Project are anticipated to have minimal impact on these bat species.

#### 6.1.2 Birds

Ten state sensitive bird species and two protected eagle species have the potential to occur within the Analysis Area (Table P-4). All bird species with habitat requirements overlapping with those occurring within the Analysis Area could be potentially impacted by the Project. Construction and operation of the Project will result in permanent loss of habitat, which could displace nesting and foraging birds. However, birds using habitat within the Site Boundary are expected to relocate to other suitable habitat in the greater vicinity of the Project.

Avian mortality at the Project due to collision with infrastructure is also possible, although the available data on avian mortality at utility scale solar energy sites suggests mortality at photovoltaic facilities is comparatively low. A study examining avian fatalities at two power tower

solar sites and one photovoltaic facility found the mortality rate at the photovoltaic facility in the study was significantly lower than at the two power tower facilities (Walston et al. 2016). More recently, Kosciuch et al. (2020) synthesized results from fatality monitoring studies at 10 photovoltaic solar facilities across the Southwestern U.S. and calculated a high-end estimate of 2.5 birds per MW per year, but noted that an average annual fatality rate of 1.8 birds per MW per year was also calculated by excluding the one project in the Coastal California Bird Conservation Region that could be considered an outlier in the dataset. Kosciuch et al. (2020) also found that water-obligate birds occurred at 90 percent of site-years in the Sonoran and Mojave Deserts Bird Conservation Region, and that adjusted composition was higher for water associates and water obligates the closer the facility was to the Salton Sea (which serves as stop-over and wintering habitat for water birds). The sites farthest from the Salton Sea showed almost no contribution to adjusted composition of water associates and water obligates, including no contribution from the one facility in the Great Basin Bird Conservation Region (in Nevada), which is the Bird Conservation Region that overlaps with the Project.

A study focusing on avian use at photovoltaic installations at or near five airports in the United States found that passerine species, including red-winged blackbirds, sometimes use shade provided by panels on summer days, and sometimes perch on panels to sing in the early part of the breeding season (DeVault et al. 2014). This behavior is similar to anecdotal mourning dove use of the photovoltaic facility examined in Walston et al. (2016) and WEST (2014). DeVault et al. (2014) also found that although insectivorous avian species were observed foraging near the arrays, the abundance of foraging birds was similar to the abundance in nearby grasslands. No fatalities were clearly attributable to collision with panels.

In Oregon, preliminary results of a fatality study at a 56-MW photovoltaic facility near Prineville detected only two fatalities on native birds during 1 year of standardized searches, consisting of a horned lark and a dark-eyed junco (Kosciuch and Hutchinson 2020, ODOE 2020). These results are the first for the region in Oregon and suggest that large fatality events are unlikely at photovoltaic solar facilities in the region but that low numbers of fatalities of common ground-dwelling bird species could occur (Kosciuch and Hutchinson 2020, ODOE 2020).

The limited avian mortality and usage data for utility scale solar energy sites suggests that mortality at photovoltaic facilities in particular is low; therefore, impacts to sensitive bird species with the potential to occur within the proposed micrositing corridor are addressed below in terms of habitat removal, structural collision, vehicular collision, artificial lighting, entrapment within open vertical pipes, and nesting disturbance during construction and operation. Measures described in Section 7.0 will be used to minimize or avoid these potential impacts.

- Bald eagle (BGEPA). A potential adverse impacts to bald eagles is loss of scavenging
  habitat, mainly during migration and winter. Powerline collision and electrocution are not
  anticipated, as the Project does not include a transmission line and collector lines will be
  buried.
- **Brewer's sparrow (state sensitive).** While not recorded during surveys, the availability of habitat for this species suggests that this species may occur at the Project. Potential adverse

impacts to this species due to the construction and operation of the Project are habitat loss and potential nesting disturbance in areas where limited stands of larger shrubs may be located. Additionally, collision with infrastructure during nocturnal migration may be an adverse impact to this species.

- Burrowing owl (state sensitive-critical). Generally tolerant of human activity, and
  opportunistic hunters for insects and small mammals, burrowing owls may use the
  operating Project to hunt, and may also nest if burrows become available. Therefore,
  construction of the Project may result in loss of hunting and breeding habitat. Potential
  operational impacts to this species include collision with vehicles during the breeding
  season.
- **Common nighthawk (state sensitive).** Construction and operation of the Project could pose a risk to these birds, which nest on a variety of substrates in open areas including bare ground, gravel, and lithosol. Males also tend to roost on gravel roads, and therefore may roost within the Site Boundary. During construction and operation, nesting disturbance and collision with vehicles may adversely impact this species.
- **Ferruginous hawk (state sensitive-critical).** The primary potential impact to this species is foraging habitat loss, although ground squirrel colonies, which are prey for this species, are not known to occur within the Site Boundary.
- **Golden eagle (BGEPA).** A potential adverse impacts to golden eagles is loss of foraging habitat. Powerline collision and electrocution are not anticipated, as the Project does not include a transmission line and collector lines will be buried.
- **Grasshopper sparrow (state sensitive).** Grasshopper sparrows were recorded during 2019 surveys for the Project, but not during 2020 surveys. Construction and operation of the Project will result in the loss of some suitable breeding and foraging habitat for grasshopper sparrow. Generally a nocturnal migrant, this species may be attracted to artificial lights during migration; therefore, collision is an additional potential, adverse impact to this species during construction and operation of the Project.
- **Lewis's woodpecker (sensitive-critical).** This species has limited potential to occur at the Project as a vagrant during migration. Construction of the Project will not result in a loss of habitat for this species. A diurnal migrant, this species will not be adversely impacted by artificial lighting.
- **Loggerhead shrike (state sensitive).** The primary potential adverse impact to loggerhead shrike are habitat loss and nesting disturbance. Little information exists regarding whether this species is a nocturnal or diurnal migrant; impact to this species during migration due to artificial lighting is unknown.
- Long-billed curlew (state sensitive-critical). This species was observed during 2019 surveys. The Project is in their typical breeding range in Oregon. Potential adverse impacts due to Project operation include displacement from potential nesting and foraging habitat

as well as potential collision with vehicles intermittently operating on site during the spring and early summer months.

- Sagebrush sparrow (state sensitive-critical). Potential adverse impacts to sagebrush
  sparrows are habitat loss, nesting disturbance, and possibly lighting-related disturbance
  during migration, though its migratory behavior is poorly described.
- **Swainson's hawk (state sensitive).** This species was observed flying over the Analysis Area during Project surveys. Construction may result in loss of hunting habitat during breeding and migration.

### 6.1.3 Reptiles

Two state sensitive reptile species have the potential to occur within the Analysis Area: northern sagebrush lizards and California mountain kingsnakes (Table P-4). Neither species was observed during 2019 or 2020 surveys, but both occur in Umatilla County (ORBIC 2019). The Analysis Area contains no suitable habitat for the California mountain kingsnake and very limited habitat for the northern sagebrush lizard (Table P-4). Potential impacts to the northern sagebrush lizard include destruction of potential sagebrush shrub-steppe habitat. No adverse impacts to California mountain kingsnake are anticipated.

### 6.2 Potential Impacts to Fish and Wildlife Habitat

All impacts resulting from the construction and operation of this Project are considered permanent for the purposes of this Application for Site Certificate. Permanent impact areas are those that would be converted from the existing condition to a different condition for the life of the Project. Direct impacts to habitat include permanent loss of some specific habitat types; indirect impacts may include increased potential for the invasion of noxious weeds, particularly along fence lines and roads. These habitats are identified and described in Section 3.0, and Table P-6 provides the number of acres that will be permanently impacted by the Project, organized by habitat category and subtype.

Table P-6. Disturbance by Habitat Subtype and Habitat Category

Habitat Type	Habitat Subtype	Habitat Category Permanent Impacts (Acres)			
indicate Type	indicate Subtype	3	4	5	6
Upland Grassland,	Eastside Grasslands	-	139	161	-
Shrub-steppe and Shrubland	Shrub-steppe	20	-	-	-
Agriculture, Pasture, and Mixed Environs	Orchards, Vineyards, Wheat Fields, Other Row Crops	-	-	-	4
Urban and Mixed Environs	Urban and Mixed Environs	-	-	-	0
Total by Habitat Categor	20	139	161	4	
Total Disturbance Acro	eage		32	24	

### **6.2.1** *Category 3*

Category 3 habitat that will be impacted by the Project consists of Shrub-steppe dominated by sagebrush that will be permanently impacted during Project construction. The two small areas of Category 3 Shrub-steppe mapped within the Site Boundary that will be impacted are composed primarily of mature, big basin sagebrush(Artemisia tridentata), with subdominant shrub species rubber rabbitbrush (Ericameria nauseosa) and green rabbitbrush (Chrysothamnus viscidiflorus; Figure P-3, Figure P-4). Scattered bitterbrush (*Purshia tridentata*) shrubs were also observed in the northern area of Shrub-steppe. The dominant understory species in the areas of Shrub-steppe is cheatgrass (*Bromus tectorum*), with a subcanopy layer composed of both native and non-native species including Sandberg's bluegrass (Poa secunda), yarrow (Achillea millefolium), fiddleneck (Amsinckia sp.), needle and thread grass (Hesperostipa comata), wooly plantain (Plantago patagonica), bulbous bluegrass (Poa bulbosa), salsify (Tragopogon sp.), prickly lettuce (Lactuca serriola), and cereal rye (Secale cereale). In addition to disturbances around the edges of the Site Boundary (e.g., agricultural activity and roads), these areas also harbor glass bottles, metal cans, household appliances and other discarded items. No special-status species were observed in Shrubsteppe at ground level during field surveys, however Swainson's hawks were observed in flight over Shrub-steppe habitat during 2019 surveys.

### **6.2.2** *Category 4*

Category 4 habitat that will be impacted by the Project consists of Eastside Grassland habitat that will be permanently impacted during Project construction, and may provide nesting and foraging habitat for sensitive birds. The Category 4 Eastside Grassland that will be impacted is primarily composed of non-native cereal rye, cheatgrass, and bulbous bluegrass. Subdominant species for Category 4 habitat are a mix of natives and non-natives, including, fiddleneck, yarrow, wooly plantain, yellow starthistle (*Centaurea solstitialis*), prickly lettuce, tumble mustard (*Sisymbrium* altissimum), salsify, Russian thistle (Salsola sp.), and stork's bill (Erodium cicutarium). The Category 4 Eastside Grassland that will be impacted includes scattered native shrubs such as green rabbitbrush and rubber rabbitbrush. In addition, scattered big basin sagebrush was observed in the Category 4 Eastside Grassland, primarily in proximity to the areas of Category 3 Shrub-steppe. Existing disturbance within Category 4 Eastside Grassland habitat included invasive plants and two-track roads, as well as existing transmission lines. The Category 4 Eastside Grassland was dominated by non-native species but contained a greater diversity of plants and vegetation structure that provided more functional habitat for wildlife than the Category 5 Eastside Grassland. Sensitive species observed in Category 4 Eastside Grassland included long-billed curlews and Swainson's hawks (Buteo swainsoni).

### 6.2.3 *Category 5*

Category 5 habitat that will be impacted by the Project consists of Eastside Grassland habitat that will be permanently impacted during Project construction. The Category 5 Eastside Grassland that will be impacted is dominated by cheatgrass (*Bromus tectorum*). Subdominant species include

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cereal rye, Russian thistle, yellow starthistle, salsify, and stork's bill. Compared to Category 4 Eastside Grassland, the Category 5 Eastside Grassland contained almost exclusively non-native vegetation and appeared to be subject to ongoing disturbance (e.g., scattered with farm equipment and trails, recently mowed, and potentially subject to spraying and vehicle overflow from the adjacent farm field); the plants within the Category 5 Eastside Grassland were small in stature (likely from periodic mowing) and the only shrubs present (green rabbitbrush and rubber rabbitbrush) were in the transition zone adjacent to the mapped Category 3 Shrub-steppe habitat. Sensitive species observed in Category 5 Eastside Grassland included grasshopper sparrows.

### **6.2.4** *Category* **6**

Category 6 habitat that will be impacted by the Project consists of areas of active agriculture (i.e., Orchards, Vineyards, Wheat Fields, Other Row Crops) where agricultural fields on adjacent properties extend into the Site Boundary. The Site Boundary is bordered by gravel roads, paved roads, two track roads, a waste-water treatment pond, and active row-crops, which limit the habitat connectivity and function of the Category 3, 4, and 5 habitats described above. These areas are included as Urban and Mixed Environs within the Analysis Area, but outside of the Project Boundary therefore will not be impacted by the Project.

# 7.0 Measures to Avoid, Reduce, or Mitigate Impacts – OAR 345-021-0010(1)(p)(G)

OAR 345-021-0010(1)(p) (G) A description of any measures proposed by the applicant to avoid, reduce, or mitigate the potential adverse impacts described in (F) in accordance with the general fish and wildlife habitat mitigation goals and standards described in OAR 635-415-0025 and a description of any measures proposed by the applicant to avoid, minimize, and provide compensatory mitigation for the potential adverse impacts described in (F) in accordance with the sage-grouse specific habitat mitigation requirements described in the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-140-0000 through -0025, and a discussion of how the proposed measures would achieve those goals and requirements.

This section identifies the avoidance, minimization, and mitigation measures that have been and will be implemented to avoid, minimize, and mitigate potential adverse impacts to fish and wildlife habitat and state sensitive species, and describes how these measures will ensure the Project meets the ODFW habitat mitigation goals.

#### 7.1 Avoidance and Minimization

### 7.1.1 Project Design

Measures employed during Project design to avoid and minimize impacts to fish and wildlife habitat as well as state sensitive species, included the following:

- To the extent feasible, the Applicant sited the Project on previously disturbed habitat, including degraded grassland.
- The Applicant will use Project-specific measures that follow Avian Powerline Interaction Committee guidelines for minimizing avian electrocutions (APLIC 2006); because the Project does not propose a new transmission line and will not modify the existing transmission lines (e.g., the existing transmission lines within the Site Boundary), Project components that will incorporate these measures are anticipated to consist of the substations and their associated equipment. This is expected to minimize the risk of electrocution to raptors generally, and to bald eagles, golden eagles, Swainson's hawks, and ferruginous hawks in particular.
- The collector line system will be buried, and the Project does not propose a transmission line, which will minimize risk of avian collision.
- The Applicant will implement down-shield lighting for permanent lighting at the substations and O&M enclosure. Outdoor lighting will be sited, limited in intensity, shielded, and hooded in a manner that prevents the lighting from projecting onto adjacent properties, roadways, and waterways. This is expected to minimize the risk of avian collision with Project infrastructure for all birds and bats in general, but to nocturnal migrant species (including Brewer's sparrows, sagebrush sparrows, grasshopper sparrows) and to the crepuscular, insectivorous common nighthawk in particular. Down-shield lighting will be in place year-round, mitigating impacts to birds and bats both during migration and while foraging for insects at any time of the year.
- The Applicant will cap or otherwise modify vertical pipes and piles to prevent cavity-dwelling and nesting birds from entering. This also prevents any perching bird from inadvertently falling into pipes. These caps are expected to minimize the risk of fatalities to all birds (including the cavity-nesting Lewis's woodpecker), as well as small mammals and lizards.

### 7.1.2 Construction and Operation

Measures for avoiding and minimizing impacts to fish and wildlife habitat, state sensitive, and other wildlife species will be implemented during construction as follows:

- The Applicant will clear vegetation prior to the critical period for ground-nesting birds (April 15 September 1) to avoid disturbing active nests.
- If vegetation removal is necessary between April 15 and September 1, a biologist will conduct a clearance survey for nesting birds prior to vegetation removal. Active nests will be flagged for avoidance.
- Construction vehicles will be limited to 20 miles per hour on all Project access roads (excluding public roads). This is expected to limit impacts specifically to burrowing owls, common nighthawks, long-billed curlews, and to all wildlife in general.

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- The Applicant will implement a weed control plan during construction to minimize the
  introduction of new noxious weed species and to control existing populations of target
  noxious weeds to minimize noxious weed impacts to surrounding habitat. A draft noxious
  weed control plan was prepared and is included in Attachment P-4. It includes specific
  preventative methods and treatment methods for controlling weeds within the Project Site
  Boundary.
- The Applicant will develop and implement a Project-specific worker environmental training program throughout the construction of the Project. All employees and contractors working in the field will be required to attend the environmental training session prior to working on-site. This training will include information regarding the sensitive biological resources including potentially occurring listed and sensitive species, individual responsibilities associated with the Project, and the consequences of non-compliance. Written material will be provided to employees at orientation and participants will sign an attendance sheet documenting their participation.

Following construction, measures for avoiding and minimizing impacts to fish and wildlife habitat and to state sensitive and other wildlife species will be implemented as follows:

- The Applicant will identify licensed local wildlife rehabilitators capable of responding to the Project in the event of injured wildlife.
- Operations and maintenance vehicles will be limited to 20 miles per hour on all Project access roads (excluding public roads). This is expected to limit impacts specifically to burrowing owls, common nighthawks, long-billed curlews, and to all wildlife in general.
- Following construction, the Applicant anticipates maintaining low-growing vegetation between the solar arrays and either gravel or low-growing vegetation below the solar arrays. Gravel will be applied at the substation and switchyard and at each inverter/transformer pad and at the main access roads. Following preparation of the soil, a seed mix will be applied. The seed mix for the low-growing vegetation will take into account the vegetation currently on site and the needs for fire hazard reduction and facility maintenance. The Applicant will implement a weed control plan during operations and new noxious weeds detected during post-construction revegetation will be considered a result of construction activities and shall be controlled and treated accordingly. Following construction, monitoring for target noxious weeds will be conducted annually for the first five years to assess weed growth and to inform noxious weed control measures. Noxious weed monitoring will consist of a site survey, conducted during the growing season, to identify noxious weed species that have established within the Project Site Boundary, as well as inspections of treated areas to assess the success of previous noxious weed treatments. Additional details regarding weed monitoring are included in the draft noxious weed control plan in Attachment P-4.
- The Applicant will develop and implement a Project-specific worker environmental training program throughout the operation of the Project. All employees and contractors working in

the field will be required to attend the environmental training session prior to working onsite. This training will include information regarding the sensitive biological resources including potentially occurring listed and sensitive species, individual responsibilities associated with the Project, and the consequences of non-compliance. Written material will be provided to employees at orientation and participants will sign an attendance sheet documenting their participation.

### 7.2 Mitigation

After avoidance and minimization measures have been implemented, some impacts to wildlife habitat and sensitive species will remain. Permanent habitat loss will be mitigated for according to ODFW Habitat Mitigation Policy goals and standards, as described in the Habitat Mitigation Plan (Attachment P-5). Included in this plan are measures for protecting and enhancing sufficient acreages of wildlife habitat to compensate for those acreages permanently impacted by the Project. This protection will be—at a minimum—for the duration of the Project.

### 8.0 Monitoring Program - OAR 345-021-0010(1)(p)(H)

OAR 345-021-0010(1)(p)(H) A description of the applicant's proposed monitoring plans to evaluate the success of the measures described in (G).

The Applicant does not propose monitoring. All impacts associated with the Project will be permanent, as discussed in Section 6.0, and mitigated as such; therefore, there will be no temporarily disturbed revegetated areas and thus no revegetation plan. As described in Section 6.0, the collision risk to birds and bats from the Project is expected to be low, and thus no post-construction fatality monitoring is proposed.

### 9.0 Conclusion

As part of the Project siting process, the fish and wildlife habitats within the Analysis Area were identified and categorized pursuant to OAR 635-415-0025. Based on survey results, no Category 1 or 2 habitat were identified. Permanent, unavoidable impacts to Category 3, 4, and 5 habitats impacts will be mitigated consistent with OAR 635-415-0025.

Therefore, based on the information provided in this exhibit, there is sufficient evidence upon which the Energy Facility Siting Council may find that the design, construction, and operation of the Project, taking into account the proposed mitigation measures, are consistent with the fish and wildlife mitigation goals and standards of OAR 635-415-0025. Accordingly, the Applicant demonstrates compliance with OAR 345-022-0060.

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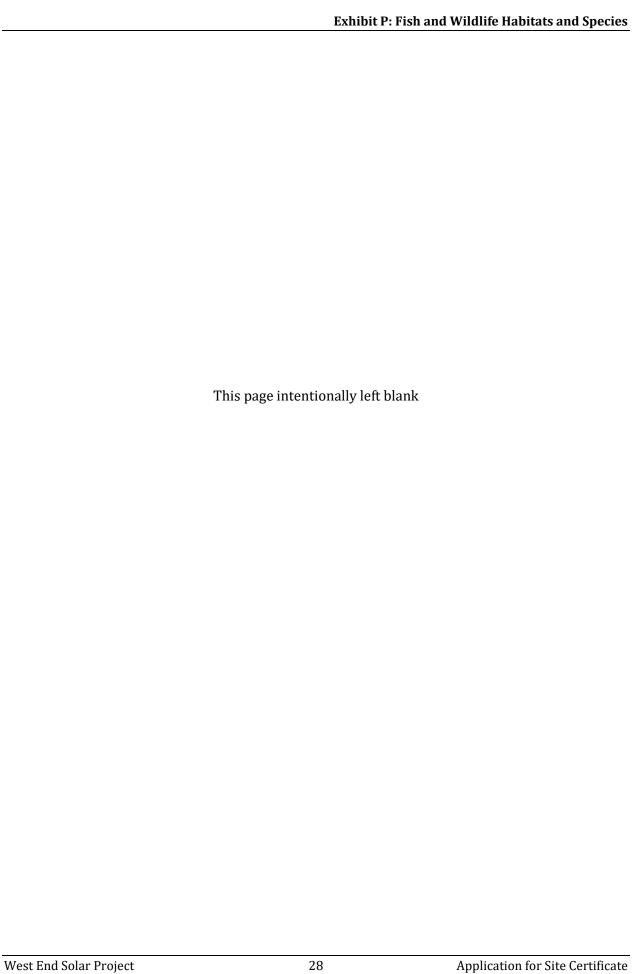
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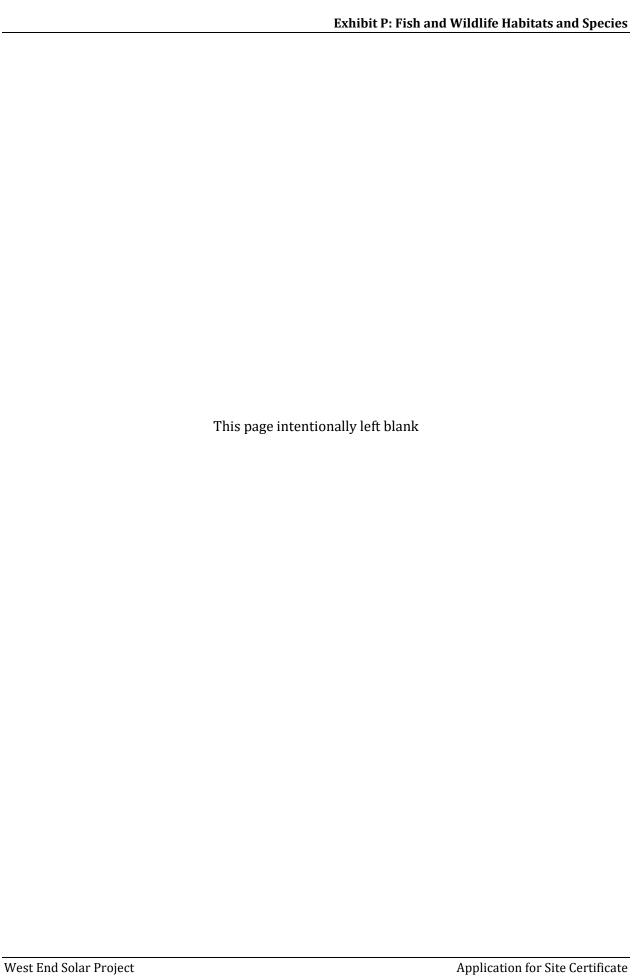
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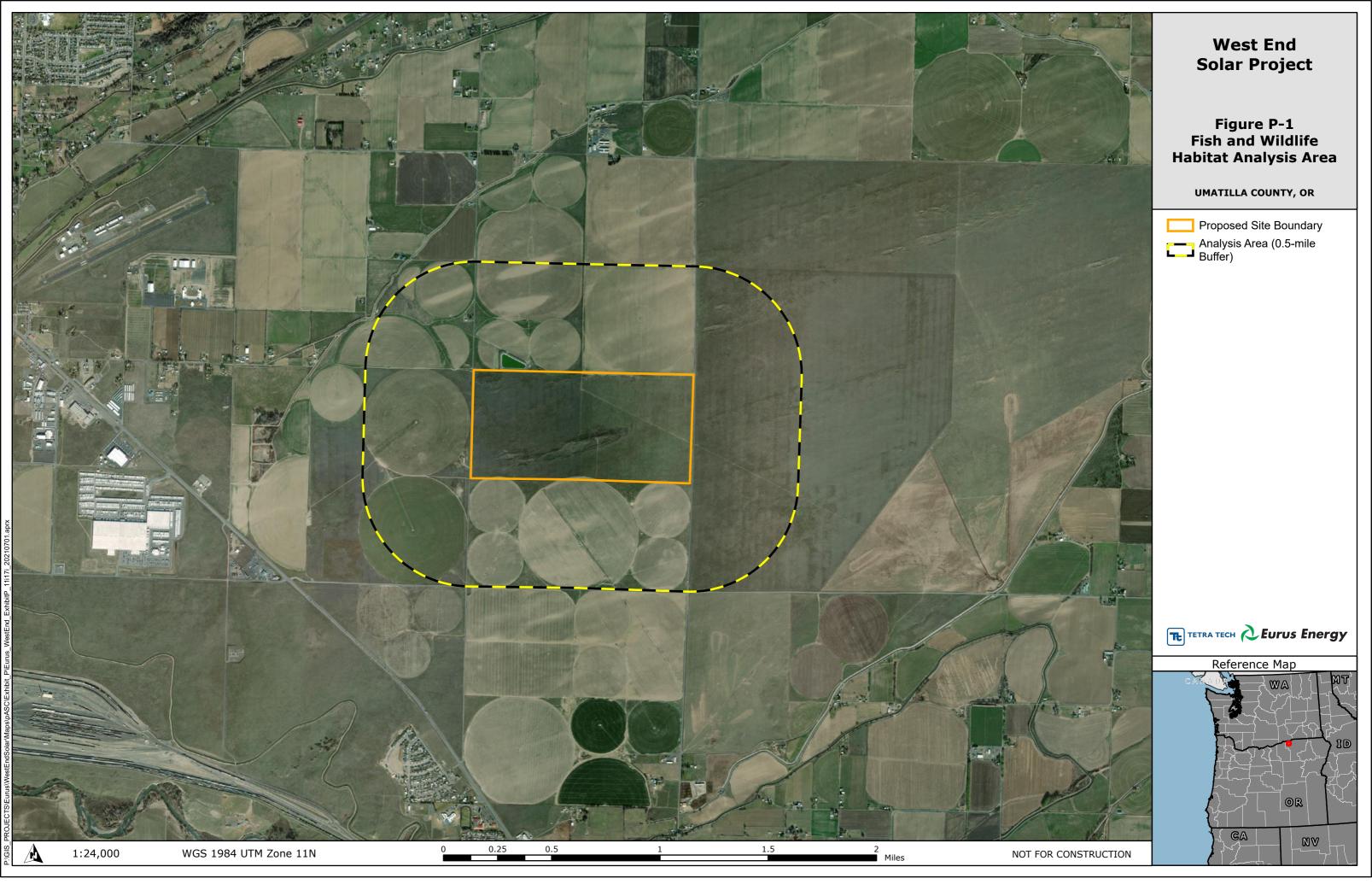
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### **Figures**







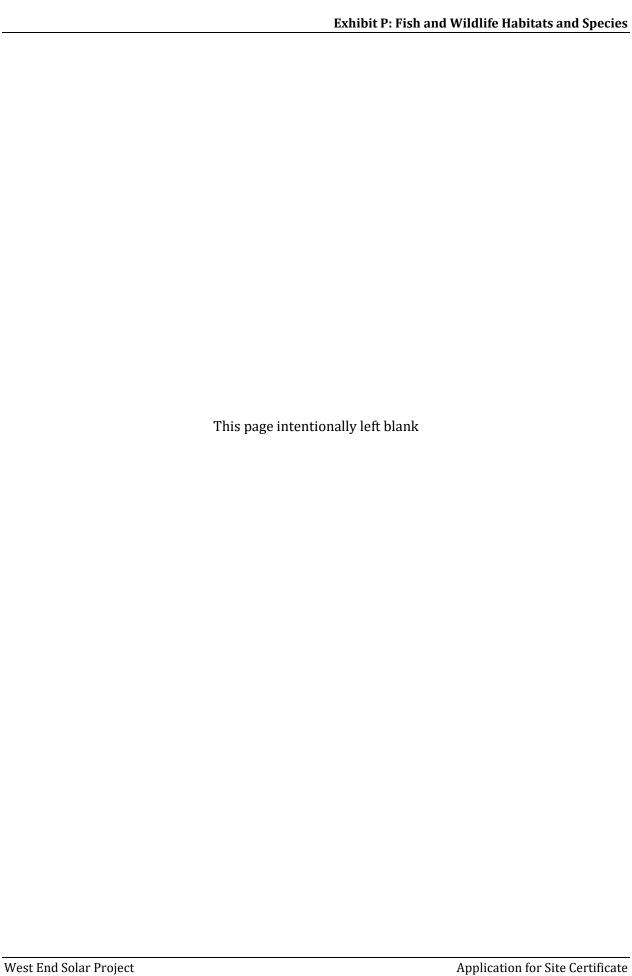








# Attachment P-1. West End Solar Project Washington Ground Squirrel Habitat Memo





# **MEMO**

To:	Greg Rimbach, Oregon Department of Fish and Wildlife
Cc:	Leslie McClain, Tetra Tech; Rob Curulla, Eurus Energy
From:	Amy Bensted, Tetra Tech
Date:	September 24, 2020
Subject:	West End Solar Project Washington Ground Squirrel Habitat Memo

This memorandum summarizes the results of Tetra Tech's desktop review of potential Washington ground squirrel (WAGS; *Urocitellus washingtoni*) habitat at Eurus's proposed West End Solar Project (Project). This memo covers areas outside the Project Area that are within 1,000 feet of, and contiguous with, potential ground disturbing activities, but were not accessible (no access granted) for field surveys in 2019 or 2020 (approximately 250 acres, Figure 1). This review is in response to a discussion with Greg Rimbach at Oregon Department of Fish and Wildlife (ODFW) on February 12, 2019 recommending that Tetra Tech provide ODFW with a desktop analysis of these areas. Specifically, ODFW requested that Tetra Tech provide the following information to assist their evaluation of the likelihood of these un-surveyed areas providing suitable habitat to WAGS:

- 1. Dimensions of the areas not surveyed;
- 2. Description of the soil and likely habitat types in the areas not surveyed; and
- 3. Results of a desktop query of WAGS survey records in the areas not surveyed.

Tetra Tech reviewed aerial photographs, Natural Resources Conservation Service (NRCS) soils data, and the results of a records query to the Oregon Biodiversity Information Center (ORBIC) for the WAGS Survey Area. Tetra Tech additionally viewed the inaccessible areas from within the accessible portions of the WAGS Survey Area and nearby public roads to identify the likely habitat type (Figure 1, Attachment 1). Habitat type and quality was determined according to the ODFW Habitat Mitigation Policy (OAR 635-415-0010). Habitat categorization involves classifying habitat into one of six categories, with Category 1 habitat being the most important to a specific species and Category 6 being the least important. Habitat type, subtype, and habitat categorization determinations were guided by the same habitat categorization matrix employed during 2019 and 2020 surveys of the Project Area (Tetra Tech 2020). The results of Tetra Tech's review are included below and are shown in Figures 1 and 2.

The WAGS Survey Area shown in Figure 1 encompasses approximately 655 acres. WAGS surveys are required within 1,000 feet of potential ground disturbance in suitable habitat, but this extent is limited by paved roads, which are considered a barrier to WAGS (ODFW 2019, ODFW 2020). South Edwards Road is a

paved road; therefore, habitat east of this road was not included in the WAGS Survey Area and is not considered further in this memo (Figure 1). Approximately 268 acres of the WAGS Survey Area were field-verified as Category 6, and primarily consist of active agriculture (Figure 1, Attachment 1). The remainder of the surveyed WAGS Survey Area, including the Project Area, is composed of Category 4 and 5 Eastside Grassland, with two smaller areas of Category 3 Shrub-steppe (Figure 3, Tetra Tech 2020).

Based on NRCS Soil Data (NRCS 2018), soil types within the areas not accessible for surveys are the same as those identified within the Project Area: Soil Map Unit 1B – Adkins fine sandy loam, 0-5 percent slopes and Soil Map Unit 74B – Quincy fine sand, 0-5 percent slopes (Figure 2). WAGS tend to inhabit sites with sandy, silt-loam soils that are supportive and deep enough to accommodate burrow structures (Betts 1990, Yensen and Sherman 2003). While these soil types lack a silt component, these soil types are appropriate for supporting small mammal burrows. A query of the ORBIC database for the WAGS Survey Area, returned one historic record for WAGS that coincides with the Project Area (ORBIC 2018). Small mammal and beetle burrows were observed during surveys in the accessible areas of the WAGS Survey Area; however, no WAGS were observed during these surveys (Tetra Tech 2020).

Biologists viewed the inaccessible areas from public roads as well as within the accessible areas inside the Project Area to determine the vegetative characteristics of these areas (Photo Points, Figure 1). A total of 211 acres of the inaccessible areas were field-verified as Category 6 consisting of cultivated fields and a small water treatment pond (Figure 1, Attachment 1). Category 6 habitat is not suitable habitat for WAGS. The remaining 39 acres of inaccessible areas are potentially suitable habitat for WAGS (Category 5, Eastside Grassland, Figure 1; Attachment 1).

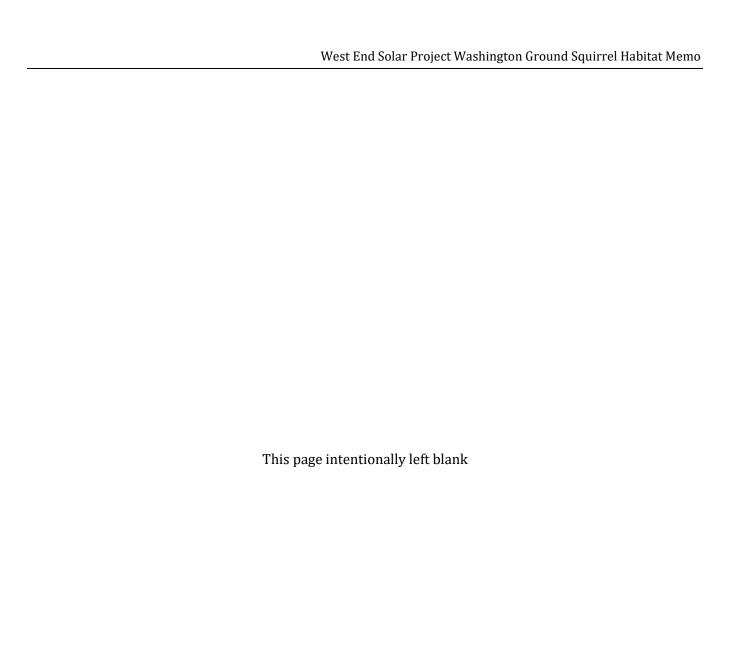
This 39-acres of potentially suitable WAGS habitat is composed of smaller areas of highly disturbed habitat situated along paved and graveled roads, between and alongside fields in active cultivation. These areas are considered in this report as an aggregate 39-acre area and are not described individually because the vegetative communities in each of these small areas were similar enough to each other to be considered in this manner. As a result, the dimensions of the areas not surveyed requested by ODFW are provided in the form of an acreage in conjunction with figures. Aerial imagery indicated that the vegetative communities in these un-surveyed areas were not expected to differ substantially from areas directly surveyed during habitat categorization surveys conducted within the Project Area (Figure 3, Tetra Tech 2020). Based on viewing from the roads and accessible areas within the Project Area (Photo Points, Figure 1), biologists determined that the vegetative communities in these areas are primarily composed of non-native plant species. Select photographs of these areas are attached for reference (Figure 1, Attachment 1).

Dominant species concentrations varied somewhat across the 39 acres; however, all dominant species were non-native: yellow starthistle (*Centaurea solstitialis*), cereal rye (*Secale cereale*), and cheatgrass (*Bromus tectorum*). Subdominant species were a mix of Russian thistle (*Salsola* sp.), stork's bill (*Erodium cicutarium*), prickly lettuce (*Lactuca serriola*), tumble mustard (*Sisymbrium altissimum*), and occasionally fiddleneck (*Amsinckia* sp.), which was the only native species observed. Big sagebrush (*Artemisia tridentata*), present in the Project Area, was not identified as a component of any of the inaccessible areas. Based on this, the most likely habitat category and subtype for this unsurveyed, non-developed 39 acres is Category 5, Eastside Grassland.

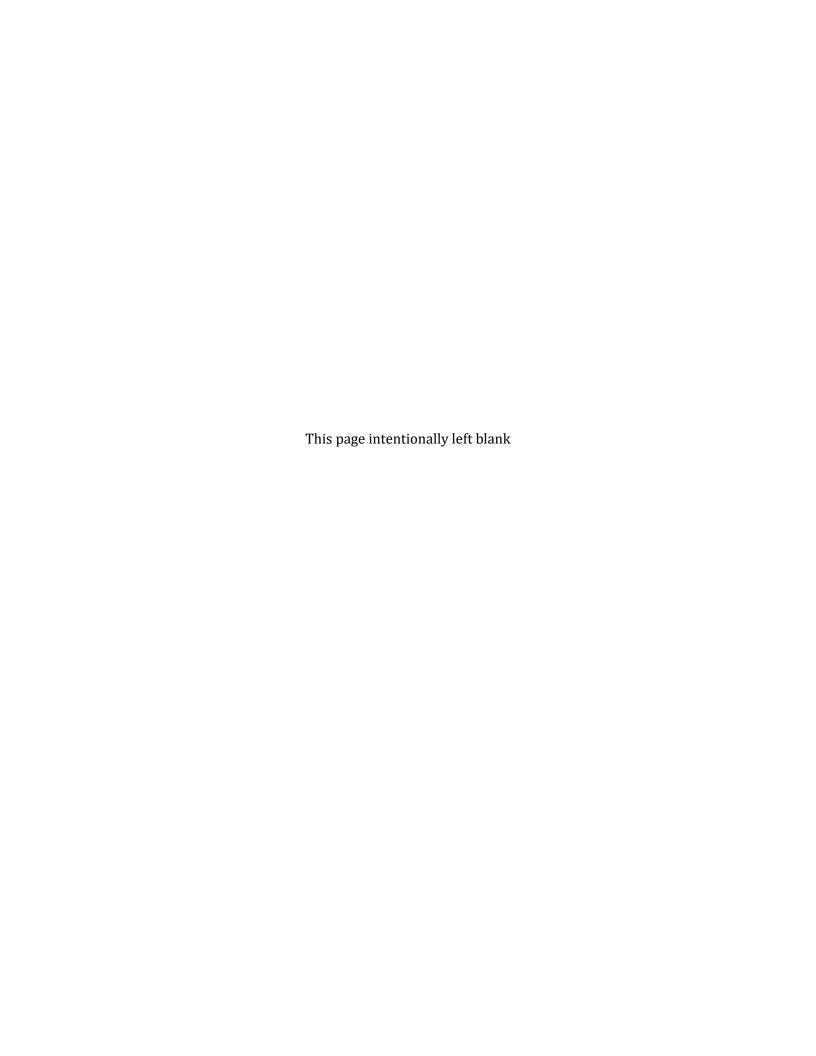
The potential WAGS habitat in the inaccessible areas is fragmented and appears to be more heavily disturbed by non-native species, agricultural activity, and roads than the majority of the Project Area. Based on this review, the quality of habitat for WAGS in the inaccessible areas reviewed in this analysis is poor.

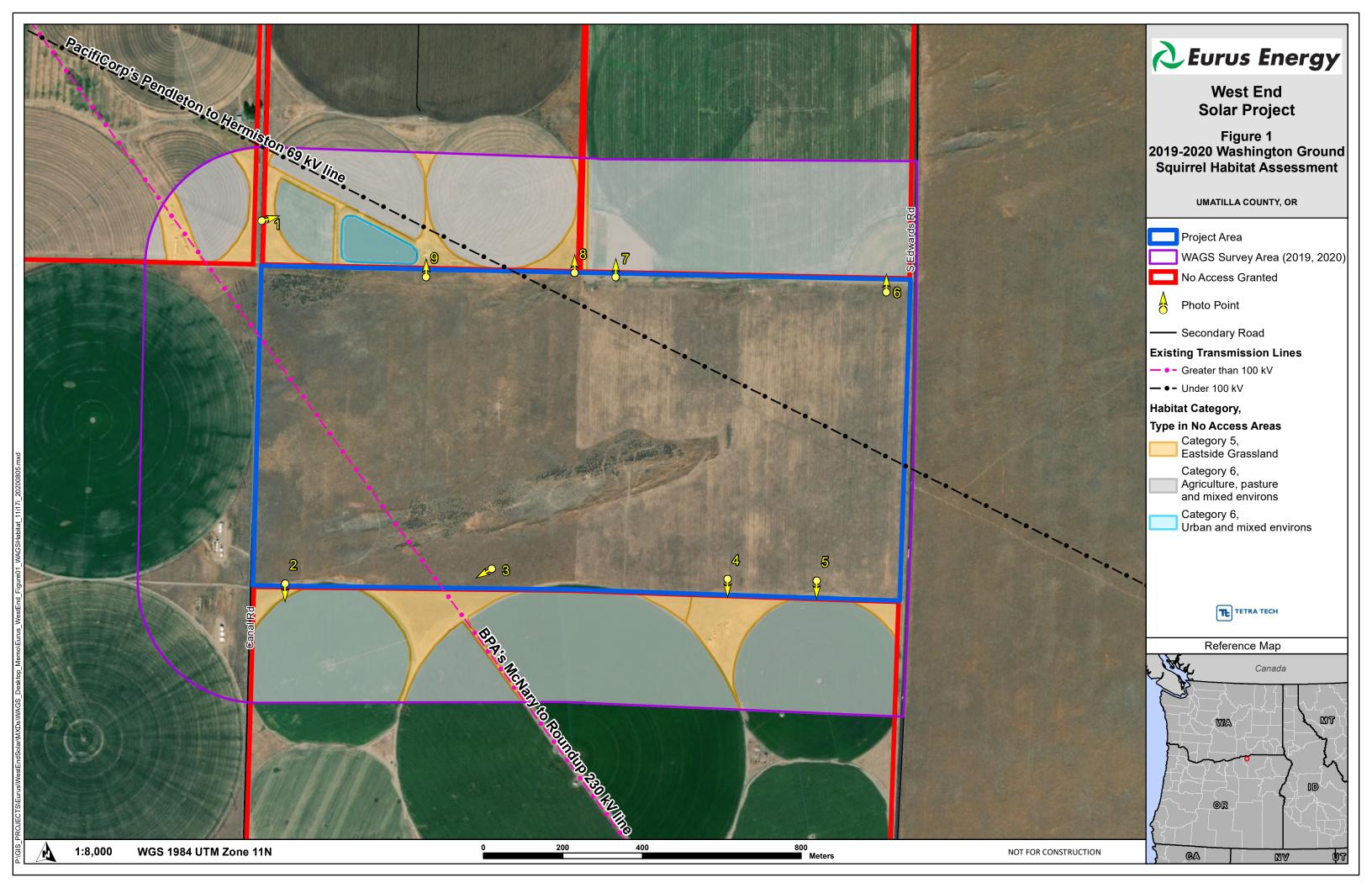
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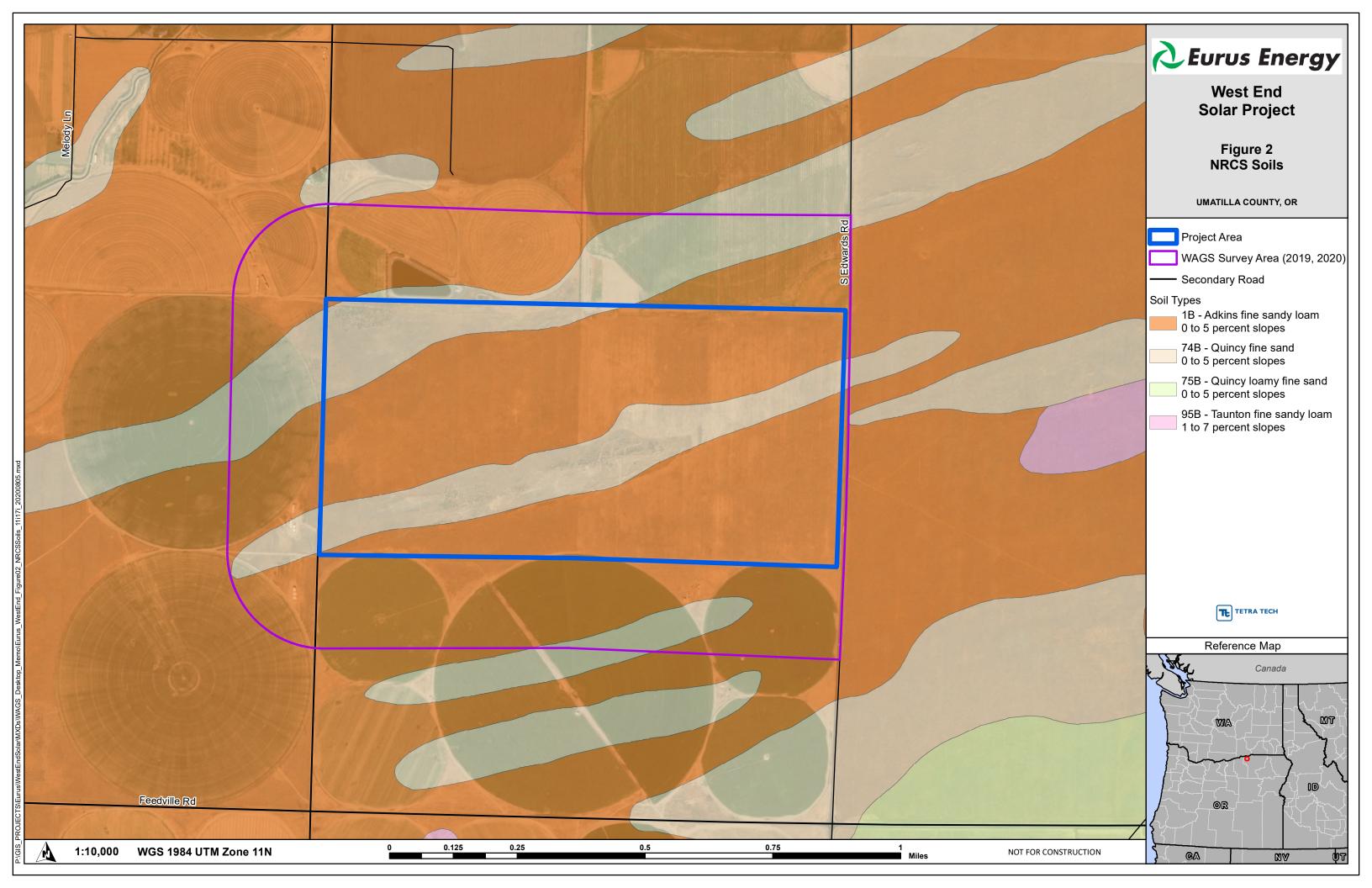
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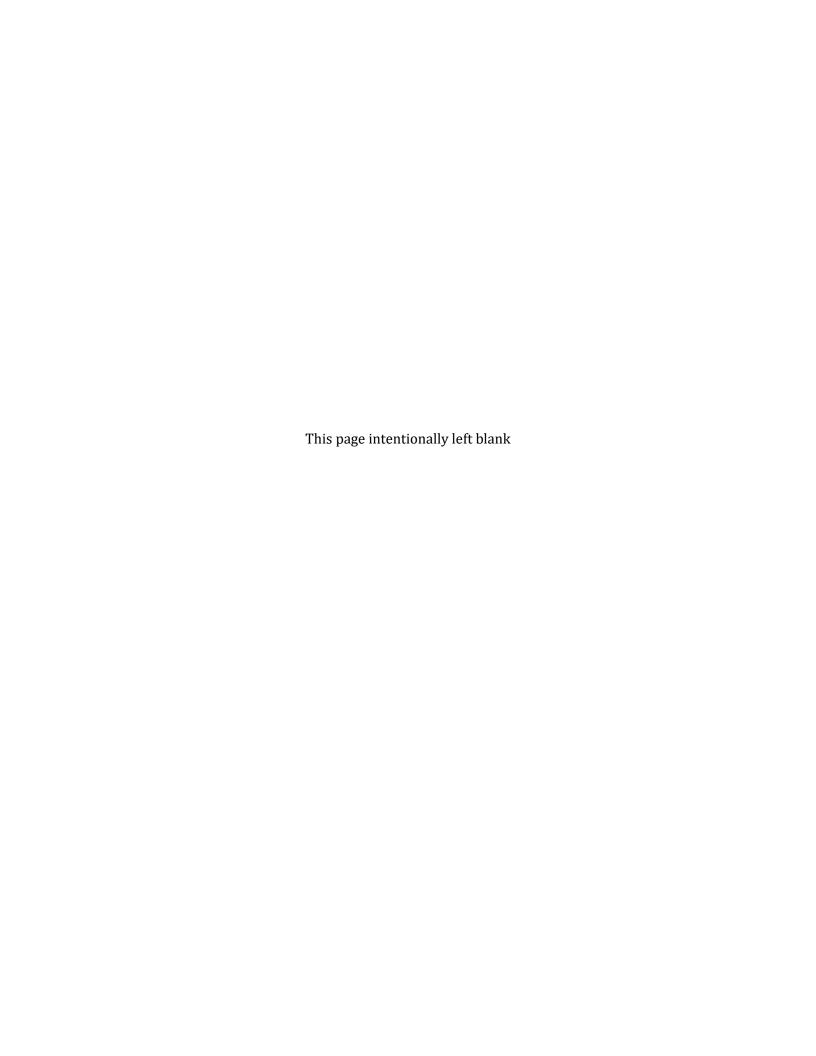
# **Figures**







# **Attachment 1. Photolog**





Point 1. Edge of active agricultural field. April 2019.



Point 3. Two-track, non-native vegetation. Looking west-southwest from southern edge of Project Area. April 2019.



Point 2. Primarily yellow starthistle. April 2019.



Point 4. Area dominated by non-native annual grasses. May 2020.

West End Solar Project 1



Point 5. Active non-wheat agriculture field. May 2020.



Point 7. Tilled agricultural field, northwest corner of WAGS Survey Area. April 2019.



Point 6. Area dominated by cereal rye and other non-native species. May 2020.



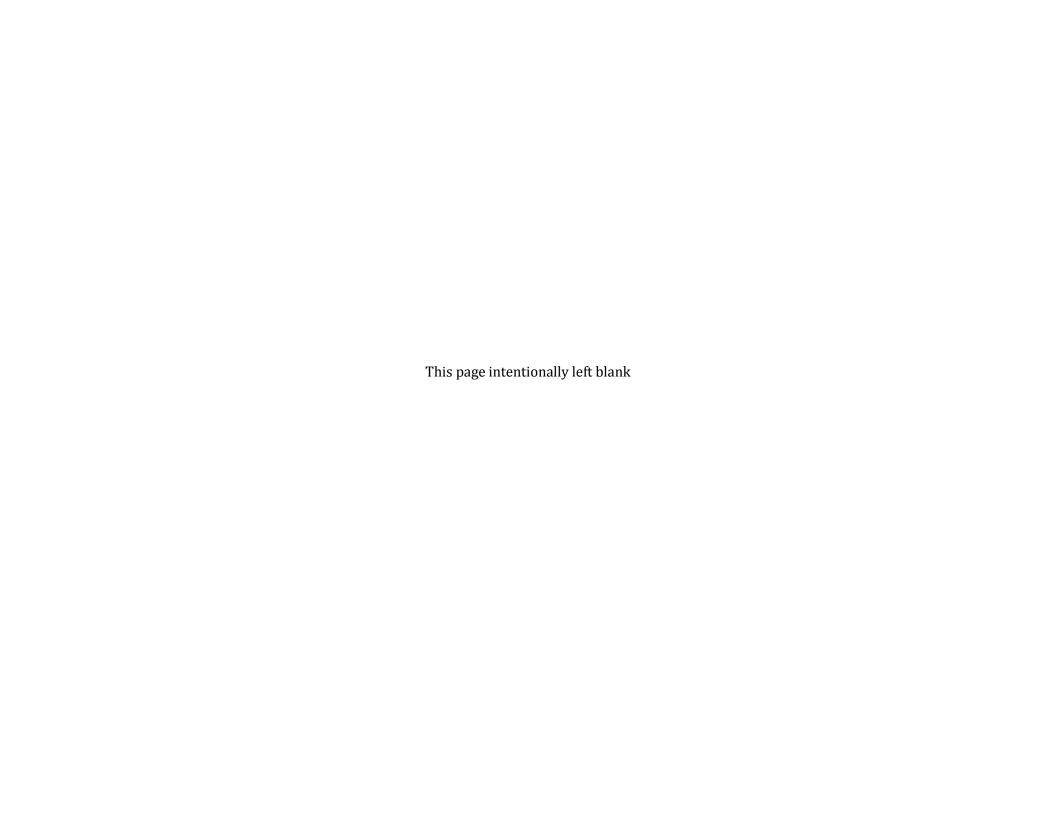
Point 8. Non-native vegetation between agricultural fields. April 2019.

West End Solar Project 2

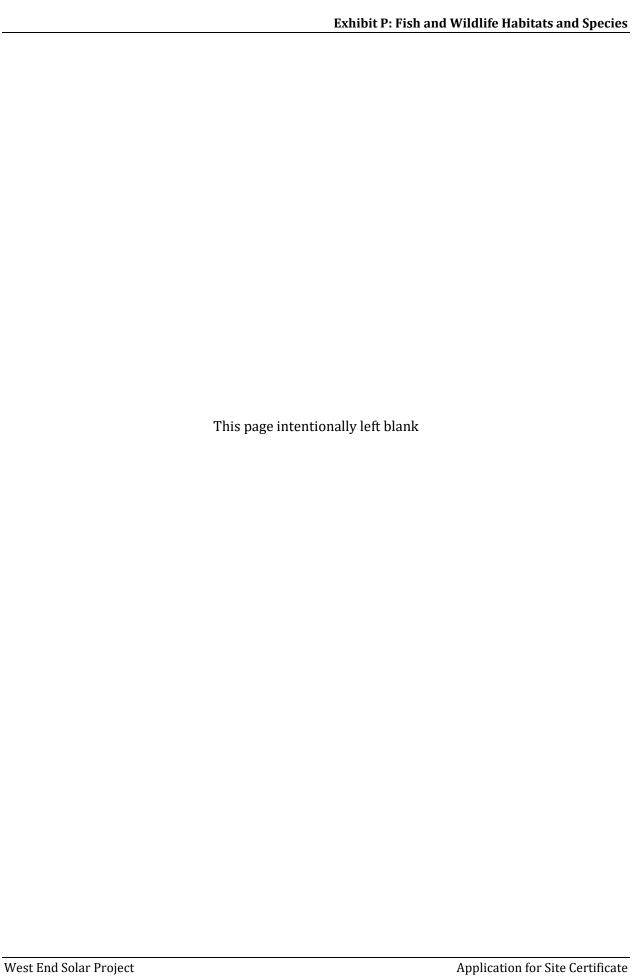


Point 9. Area adjacent to pond. April 2019.

West End Solar Project 3



# Attachment P-2. 2019-2020 Botanical and Wetland Survey Report



# 2019-2020 Botanical and Wetland Survey Report

# **West End Solar Project**

**Prepared for** 



**Eurus Energy America, LLC** 

Prepared by



Tetra Tech, Inc.

September 2020

### GENERAL DISCLAIMER FOR SCIENTIFIC WORK PRODUCTS

This deliverable was prepared in accordance with generally accepted professional practices that are typically utilized for scientific work products. The work was performed within the limitations and assumptions of our approved scope of work, and the descriptive documentation associated with this deliverable. Unless explicitly included in our approved scope of work, information provided in this deliverable has not been prepared to meet industry standards for engineering and should not be used for construction.

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- Attachment 1. Federal and State-Listed and ORBIC-tracked Vascular Plant Species with the Potential to Occur at the Project
- Attachment 2. Vascular Plant Species Observed within the Project Area
- Attachment 3. Select Site Photographs

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# 1.0 Introduction

Eurus Energy America LLC (Eurus) contracted Tetra Tech, Inc. (Tetra Tech) to conduct biological surveys in support of the West End Solar Project (Project), a proposed solar project in Umatilla County, Oregon. This summary report presents the methods and results for the botanical and wetland surveys conducted in July 2019 and June 2020. The purpose of the botanical surveys was to document the presence of federal or state-listed endangered, threatened, or candidate vascular plant species. Concurrent with the botanical surveys, Tetra Tech also assessed the Project for the presence of wetlands and other non-wetland waters. Wildlife and habitat categorization surveys are addressed in a separate report.

# 2.0 Survey Area

The Project is located on approximately 324 acres of private land within Umatilla County, roughly 1 mile east of the City of Hermiston. The botanical and wetland survey area consisted of the approximately 324-Project Area, which encompasses the proposed solar array and associated facilities (Figure 1).

# 3.0 Methods

## 3.1 Background Review

Prior to conducting field surveys, Tetra Tech conducted a desktop review to identify endangered, threatened, or candidate plant species with the potential to occur within the Project Area, and to determine the potential for the presence of wetlands and other non-wetland waters within the Project Area. Sources of information included:

- U.S. Fish and Wildlife Service (USFWS) threatened, endangered, and candidate species lists for Umatilla County (USFWS 2019a, 2020a);
- Oregon Biodiversity Information Center's (ORBIC) list of Oregon's rare, threatened, and endangered species (ORBIC 2019);
- ORBIC database of known occurrences of target plant species within the vicinity of the Project area (ORBIC 2018);
- Oregon threatened, endangered, and candidate plants (ODA 2019);
- The Oregon Flora Project (OFP 2019a, OFP 2019b);
- The PLANTS Database (NRCS 2019a);
- Gap Analysis Project /LANDFIRE National Terrestrial Ecosystems data (USGS 2011);
- USFWS National Wetlands Inventory (NWI) (USFWS 2019b, 2020b);

- U.S. Geological Survey National Hydrography Dataset (NHD) (USGS 2016);
- Google Earth Pro West End Solar Project Area (Google Earth Pro 2019, 2020).
- Web Soil Survey (NRCS 2019b, 2020); and
- The Site Characterization Report for the West End Solar Project (Tetra Tech 2018).

## 3.2 Target Plant Species

The initial list of potential, primary target species included all vascular plant species listed as endangered, threatened, or candidates for listing by the USFWS under the federal Endangered Species Act, or by the Oregon Department of Agriculture under the Oregon Endangered Species Act. Tetra Tech reviewed this initial list, as well as the sources noted above in Section 3.1, to produce a final list of target species that included all federal and state-listed and candidate plant species that have the potential to occur within or near the Project Area (Table 1). Species were eliminated from consideration if their habitat was likely absent from the Project Area, or their known or suspected range did not overlap with the Project.

Table 1. Federal and State Threatened, Endangered, and Candidate Vascular Plant Species with Potential to Occur at the Project

Scientific Name	Common Name	Federal Status <sup>1</sup>	State Status <sup>2</sup>	Survey Period
Astragalus collinus var. laurentii	Laurence's milkvetch	SOC	Т	Fruits needed; June - August
Eremothera (Camissonia) pygmaea	dwarf evening-primrose		С	June - August
Myosurus sessilis	sessile mousetail	SOC	С	March - May
1. SOC = Species of Concern				

<sup>2.</sup> T = Threatened, C = Candidate for listing

Tetra Tech also completed a review of existing literature, herbarium records, and other sources (Burke Museum of Natural History and Culture 2019, ODA 2019, OFP 2019a, OFP 2019b, WDNR 2019) prior to field surveys to generate fact sheets for each target species. These fact sheets were used by surveyors in the field and included:

- Photos of each species and its habitat;
- Information detailing habitat associations;
- Range and flowering period;
- Identifying features; and
- Characteristics distinguishing the target species from similar species within its range.

In response to a formal request to ORBIC, Tetra Tech received vascular plant element occurrence records in the vicinity of the Project Area, which included one element occurrence record for the

state threatened Laurence's milkvetch (*Astragalus collinus* var. *laurentii*), approximately 3 miles south of the Project Area (ORBIC 2018). Tetra Tech visited the location of a known Laurence's milkvetch element occurrence prior to commencing surveys in order to determine the current phenology of the species, and to provide an identification reference for individuals encountered within the Project Area.

Although not considered target species, Tetra Tech also identified 28 other vascular plant species tracked by ORBIC that have the potential to occur at the Project (Attachment 1). ORBIC-tracked species are not protected under federal or state law, but are species of conservation concern or species for which more information is needed before their status can be determined (ORBIC 2019).

# 3.3 Field Survey Methods

Tetra Tech conducted surveys for botanical resources and wetland/non-wetland waters on July 3, 2019, and June 22, 2020. The survey schedule was chosen to cover the identification period for Laurence's milkvetch and Dwarf evening-primrose (*Eremothera* [*Camissonia*] *pygmaea*). The survey period also coincided with the identification period for the majority of the ORBIC-tracked species that have the potential to occur at the Project. Although the survey period was out of the recommended identification period for sessile mousetail (*Myosurus sessilis*), this species' vernal pool habitat was considered unlikely to occur in the Project Area, and no vernal pools were observed within the Project Area during field surveys. Additionally, depending on the year, sessile mousetail is sometimes identifiable through early July.

Botanical field surveys were conducted using the Intuitive Controlled survey method, a standard and commonly accepted survey protocol (USFS and BLM 1998). This method incorporates meandering transects that traverse the Project Area, and that target the full array of major vegetation types, aspects, topographical features, habitats, and substrate types. While en route, the surveyors search for target species, and when the surveyors arrive at an area of high potential habitat (that was defined in the pre-field review or encountered during the field visit), they conduct a complete survey for the target species. Complete surveys include an examination of 100 percent of the habitat.

During surveys, Tetra Tech maintained a running list of vascular plant species encountered and made informal collections of unknown species for later identification. Identification was verified by the use of appropriate plant keys; in particular, Flora of the Pacific Northwest (Hitchcock and Cronquist 2018). For quality control, species identifications were compared against location records of known observations and vouchered specimens (OFP 2019a, 2020). Nomenclature follows the Angiosperm Phylogeny Group III system, as used by the Oregon Flora Project (OFP 2019c). The final vascular plant species list for the Project Area is included as Attachment 2.

Concurrent with the botanical surveys, Tetra Tech also surveyed the site for the presence of wetlands and other non-wetland waters. Wetland presence was assessed per methods in the Wetlands Delineation Manual, Technical Report Y-87-1 (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0; USACE 2008). As noted in these manuals, three field indicators of wetlands (hydrophytic vegetation, hydric soils, and

wetland hydrology) must be present to make a positive wetland determination. The presence of non-wetland waters was assessed based on methods described in the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

## 4.0 Results

## 4.1 Botanical Surveys

Botanical surveys were conducted within the Project Area on July 3, 2019, and June 22, 2020. Habitat within the Project Area primarily consisted of degraded grassland habitat dominated by non-native invasive grasses and forbs, including cheatgrass (*Bromus tectorum*), bulbous bluegrass (*Poa bulbosa*), cereal rye (*Secale cereale*), yellow starthistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), yellow salsify (*Tragopogon dubius*), tall tumblemustard (*Sisymbrium altissimum*), redstem stork's bill (*Erodium cicutarium*), rush skeletonweed (*Chondrilla juncea*), and prickly Russian thistle (*Salsola tragus*). Scattered shrubs such as rubber rabbitbrush (*Ericameria nauseosa*), and green rabbitbrush (*Chrysothamnus viscidiflorus*) were also occasionally observed within grassland habitat.

Two small areas of shrub-steppe were also observed in the Project Area: one in the northwest corner and one in the south-central portion of the Project Area (Photos 1 and 2, Attachment 3). The northwestern patch of shrub-steppe consisted primarily of an overstory of big sagebrush (*Artemisia tridentata* ssp. *tridentata*), with traces of rubber rabbitbrush, bitterbrush (*Purshia tridentata*), and green rabbitbrush. The understory in this area was dominated by non-native species, including cheatgrass, bulbous bluegrass, prickly lettuce, tall tumblemustard, and yellow starthistle. Ruderal native species included tall annual willowherb (*Epilobium brachycarpum*), bugloss fiddleneck (*Amsinckia lycopsoides*), and ribseed sandmat (*Chamaesyce glyptosperma*).

Shrub-steppe in the south-central portion of the Project Area was also dominated by an overstory of big sagebrush, with rubber rabbitbrush the subdominant shrub species observed. Scattered individuals of green rabbitbrush were also observed in this area. The understory of the shrub-steppe habitat in this area included a mix of native and non-native grass and forb species including needle-and-thread (*Hesperostipa comata*), Sandberg's bluegrass (*Poa secunda*), Idaho fescue (*Festuca idahoensis*), cereal rye, cheatgrass, bulbous bluegrass, yarrow (*Achillea millefolium*), woolly plantain (*Plantago patagonica*), tall annual willowherb (*Epilobium brachycarpum*), yellow starthistle, prickly lettuce, and yellow salsify.

A total of 56 vascular plant species were observed in the Project Area (Attachment 2). Of the 56 species observed, 29 (52 percent) are non-native species, including six species that are listed as noxious weeds in the State of Oregon and/or Umatilla County. State and county-listed noxious weeds observed within the Project Area include: kochia (*Bassia* [Kochia] scoparia), yellow starthistle, rush skeletonweed, Scotch thistle (*Onopordum acanthium*), cereal rye, and puncturevine (*Tribulus terrestris*). Three of these listed noxious weeds, yellow starthistle, rush skeletonweed, and

cereal rye, were highly abundant throughout the Project Area (Photo 3 and 4, Attachment 3). Attachment 2 includes the state and county noxious weed designations for the six listed noxious weeds that Tetra Tech observed during surveys.

# **4.2 Target Plant Species**

No target species were observed within the Project Area. Additionally, due to the abundance of non-native invasive species and noxious weeds, very little potential suitable habitat for target species was observed within the Project Area. However, Tetra Tech observed two ORBIC-tracked species, Columbia milkvetch (*Astragalus succumbens*) and stalked-pod milkvetch (*Astragalus sclerocarpus*). Surveyors observed Columbia milkvetch in three locations within the Project Area (Figure 2). Only five individuals were observed in these three locations. Columbia milkvetch is listed with a global rank of G4G5 (apparently secure, uncommon but not rare/secure, common, abundant and widespread), a state rank of S4 (apparently secure, not rare in Oregon) and ORBIC List 4 (Watch List) (ORBIC 2019). Photo 5 in Attachment 3 provides a representative photo of a Columbia milkvetch individual observed within the Project Area.

Stalked-pod milkvetch was observed in seven locations within the Project Area, with a total of 26 individuals observed (Figure 2). Stalked-pod milkvetch is listed with a global rank of G5 (secure, common, abundant and widespread), a state rank of S3 (vulnerable, rare, threatened or uncommon in Oregon) and ORBIC List 4 (Watch List) (ORBIC 2019). Photos 6 and 7 in Attachment 3 provide representative photos of Columbia milkvetch individuals and habitat observed within the Project Area.

Although both species are tracked by ORBIC, they are classified as "List 4: Watch." These species are "of conservation concern but are not currently threatened or endangered" and List 4 includes species "which are very rare (elsewhere) but are currently secure in Oregon, as well as taxa which are declining in numbers but are still too common to be proposed as threatened or endangered" (ORBIC 2019). List 4 species are typically being tracked because further information on their current range and abundance in Oregon is needed before they can either be removed from the ORBIC Watch List, or be considered for listing as threatened or endangered in Oregon.

#### 4.3 Wetlands and Other Waters of the US

Wetland surveys were conducted concurrently with botanical surveys on July 3, 2019, and June 22, 2020. Prior to field work, Tetra Tech reviewed the NWI database (USFWS 2019b, 2020b), NHD (USGS 2017), hydric soils data (NRCS 2019b, 2020), and aerial imagery (Google Earth 2019, 2020) to identify potential wetlands and other waters occurring within the Project Area. Desktop review of NWI and NHD data did not identify any wetlands or stream features mapped by the NWI or NHD within the Project Area (Figure 3). Based on the Natural Resources Conservation Service soil data, the Project Area is comprised primarily (235.8 acres or 73 percent) of Adkins fine sandy loam, zero to 5 percent slopes, with the remaining portions (88.0 acres or 27 percent) composed of Quincy fine sand, zero to 5 percent slopes. The Adkins fine sandy loam, zero to 5 percent slopes soil type is

considered non-hydric, whereas 1 to 32 percent of the components of the Quincy fine sand, zero to 5 percent slope soil type meet the criteria for hydric soils (NRCS 2019b, 2020).

As stated above, three field indicators of wetlands (hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to make a positive wetland determination. Based on these criteria, no wetlands were identified within the Project Area. Additionally, no stream features or other features that appear to convey water were identified within the Project Area during field surveys.

## 5.0 Conclusions and Recommendations

Tetra Tech did not observe any target plant species within the Project Area. Additionally, no wetlands or other non-wetland waters were observed within the Project Area. In general, the Project Area is dominated by non-native, invasive species, including several state or county-listed noxious weeds, and is subject to ongoing human disturbance.

Two ORBIC-tracked plant species, Columbia milkvetch and stalked-pot milkvetch, were observed within the Project Area. As stated above, ORBIC-tracked species are not protected under federal or state law, but are species of conservation concern or species for which more information is needed before their status can be determined. Tetra Tech recommends that Eurus avoid the locations of these two milkvetch species, if possible; however, avoidance of these species is not required.

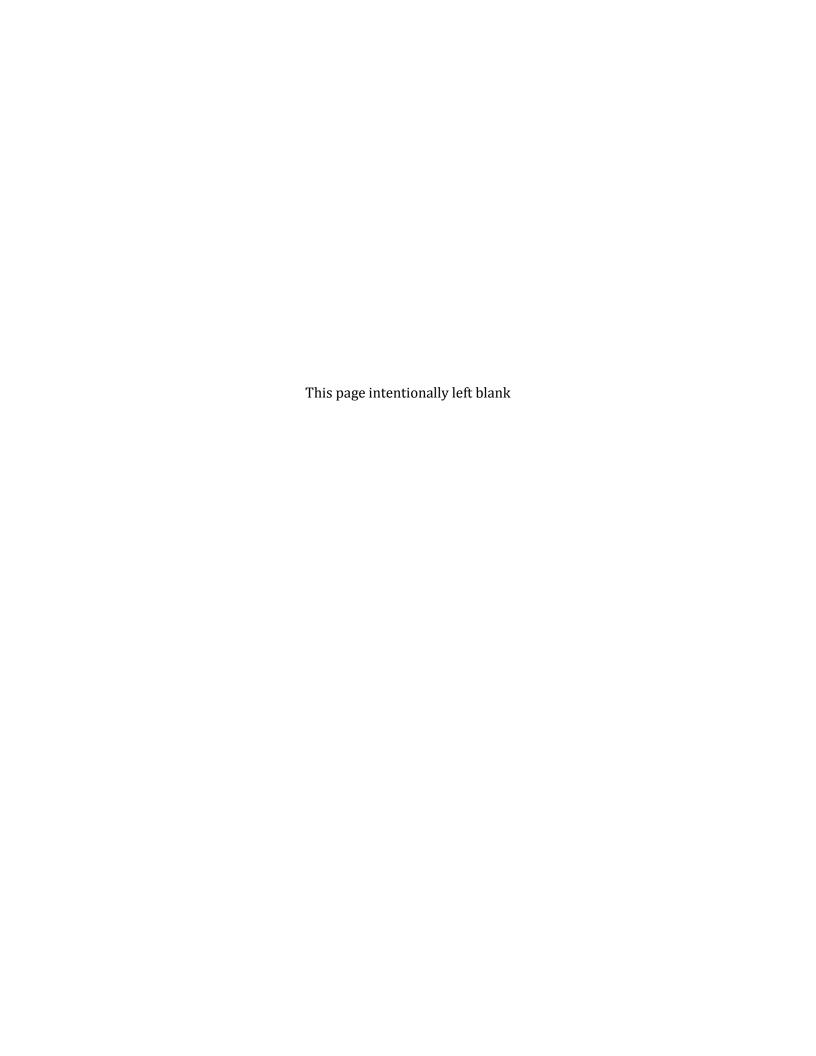
# 6.0 References

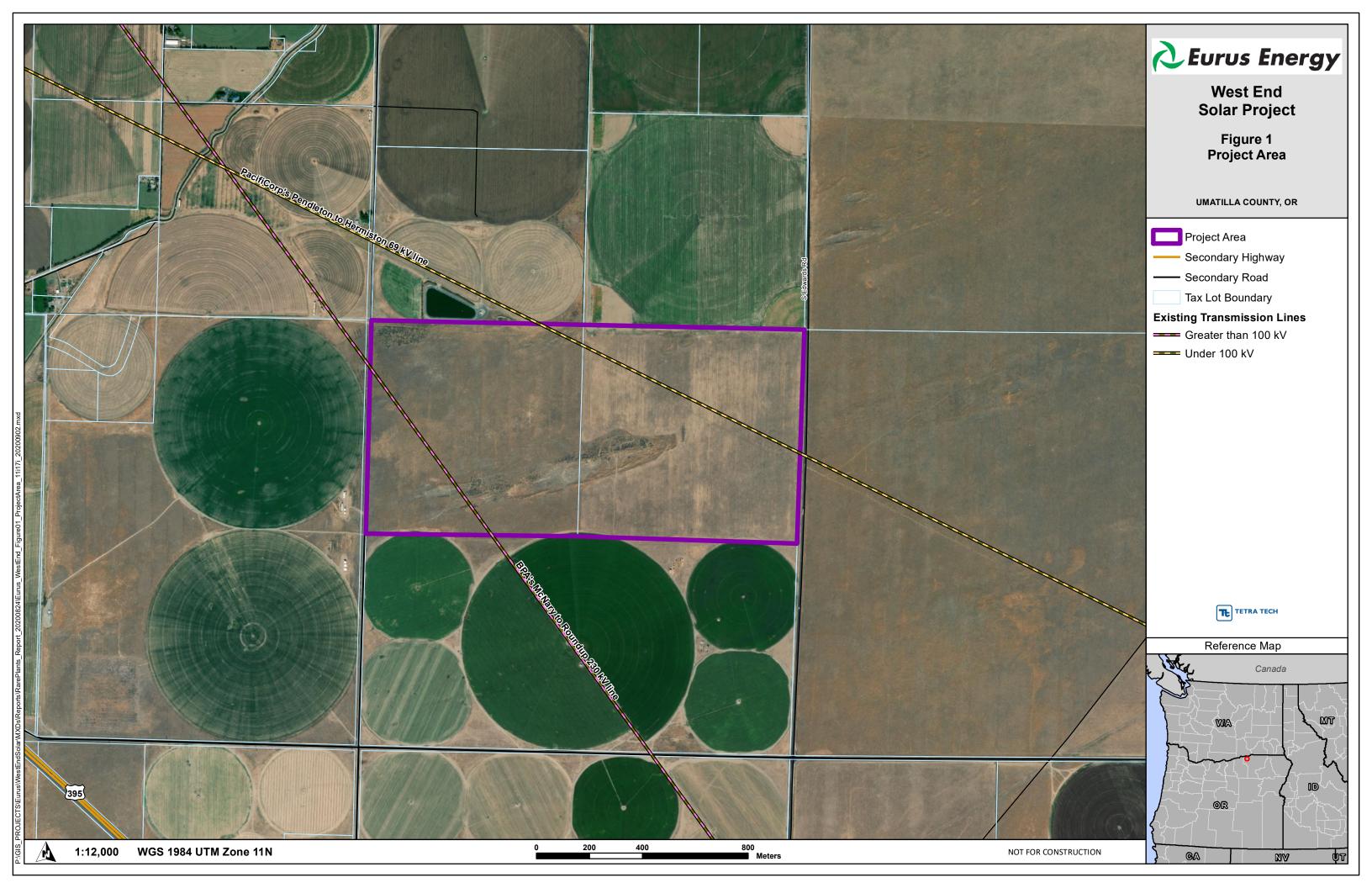
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### **Figures**



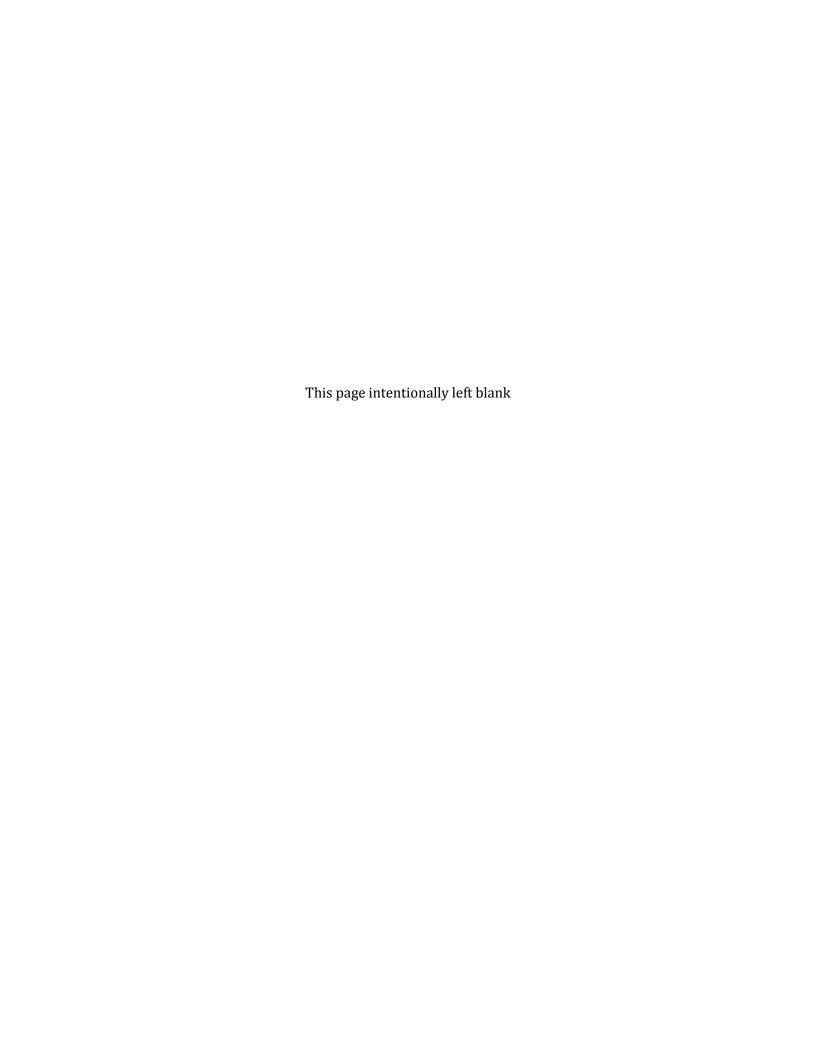








Attachment 1. Federal and State-Listed and ORBIC-tracked Vascular Plant Species with the Potential to Occur at the Project

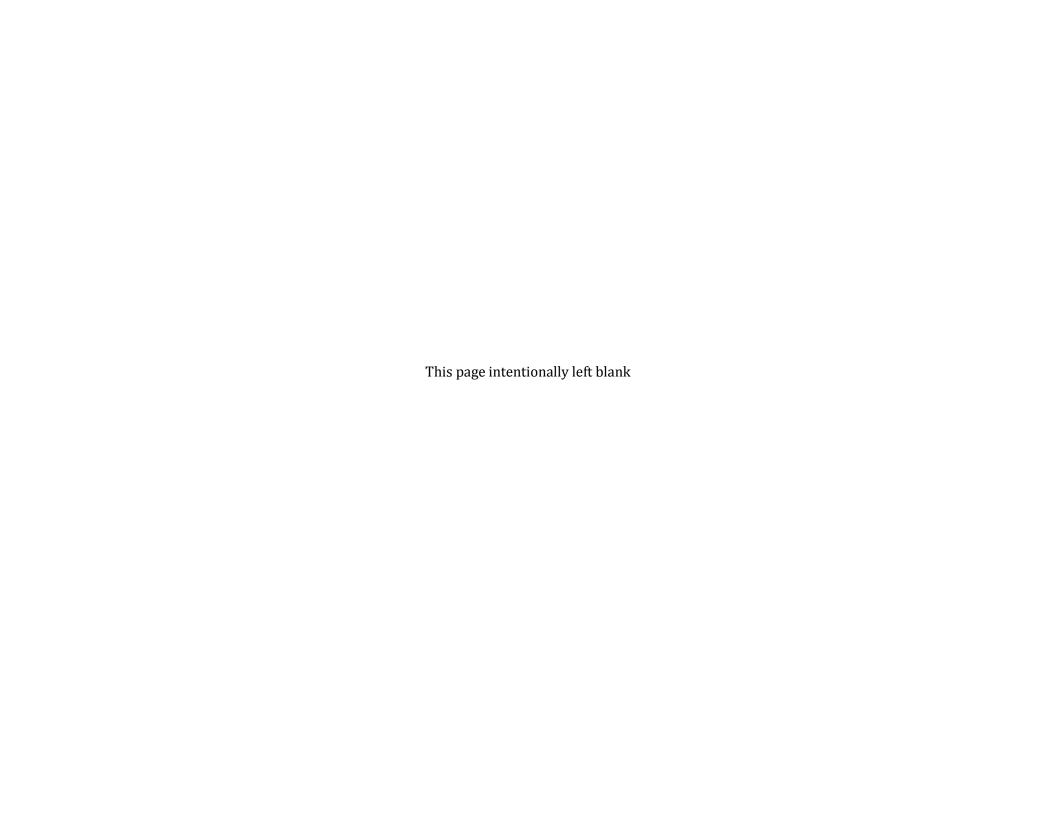


	Attachment 1: Feder	ral and St	ate-Listed	and ORE	BIC-tracked Vascular Plant Species with the Potential to Occur at the Project	
Scientific Name	Common Name	Federal <sup>1</sup>	State <sup>1</sup>	ORBIC <sup>2</sup>	Habitat <sup>3</sup>	Survey Period <sup>3</sup>
Abronia mellifera	White sand verbena			3	Dunes and sandy soils at low elevations (328 to 6,562 feet).	May - July
Achnatherum richardsonii	Richardson needlegrass			2	Intermontane valley grasslands and meadows. Common on hillsides and dry plains, in open grassland or sagebrush benches, and in bottomlands, swales, and wooded slopes; also found on moraines and gravel outwash associated with streams.	July - September
Allium robinsonii	Robinson's onion			2-ex	Rocky or sandy hillsides, lithosol benches, talus, sand and gravelly soil along rivers, and other well drained, open slopes.	April - May
Astragalus collinus var. laurentii	Lawrence's milkvetch	SOC	T	1	Sandy or rocky soils overlying basalt on dry slopes mostly at elevations between 2,000 to 3,400 feet, although species has been reported at elevations as low as 400 feet.	Fruits needed; late May - August
Astragalus conjunctus var. conjuctus	Idaho milkvetch			3	Dry rocky slopes, scablands, and hilltops throughout the sagebrush desert, typically above 2,000 feet.	April - June
Astragalus geyeri var. geyeri	Geyer's milkvetch			2	Depressions in mobile or stabilized dunes, sandy flats and valley floors.	April - July
Astragalus sclerocarpus	Stalked-pod milkvetch			4	Dunes and sandy barrens at low elevations; dry sandy banks and terraces in the steppe and lower montane zones.	June
Astragalus succumbens	Columbia milkvetch			4	Sagebrush deserts, sandy barrens, and lower foothills.	April - June
Balsamorhiza rosea	Rosy balsamroot			2	Dry, rocky slopes at low elevation.	April - May
Boechera cusickii	Cusick's rockcress			3	Sagebrush flats to open ponderosa pine forests, often on lithosol.	March - May
Carex cordillerana	Cordilleran sedge			2	Naturally disturbed, rocky slopes with organic layer and leaf litter in mesic mixed forests, or disturbed, open, grassy slopes.	late May - late July
Cryptantha rostellata	Beaked cryptantha			3	Usually in scattered patches of a few individuals along dry, open drainages at 600 to 2,900 feet.	late April - mid-June
Eremothera (Camissonia) pygmaea	Dwarf evening-primrose		С	1	Found on dry plains and slopes with unstable soils or on gravel in steep talus, dry washes, banks and roadcuts at elevations of 490 to 1,970 feet.	June - August
Helianthus nuttallii	Nuttall's sunflower			3	Moist open places, ditches, roadside; meadows and other moist places, low to moderate elevations in the mountains.	July - September
Heliotropium curassavicum	Salt heliotrope			2	Saline places at low elevations, often in the beds of dried ponds.	June -September
Isoetes minima	Midget quillwort			1	Grows in depressions that are seasonally wet, drying by mid-summer; vernal pools.	June
Lepidium acutidens	Veiny peppergrass			3	Alkaline flats, gullies, or fields, saline vernal flats, grassy fields.	February - April
Lepidium dictyotum	Alkali peppergrass			2	Open areas where often seasonally moist, such as vernal ponds; tolerant of alkaline soils. Margins of playas, saline areas, meadows, gypsum hills, dried pools, alkaline and clay flats and dsinks, near hot springs, roadsides, borders of springs and ponds, sandy flats; 0 to 5,250 feet.	March - June
Leymus flavescens	Sand wildrye			2	Sand dunes, open sandy flats, ditches and road cuts.	June - July
Lipocarpha aristulata	Aristulate lipocarpha			2	Wet soil and mud, often comprised of fine sand and silt, in bottomlands, sandbars, beaches, shorelines, streambanks, ponds, and ditches; 0 to 500 feet.	June - August
Lygodesmia juncea	Rush skeletonplant			3	Dry, open places, often in sandy soil.	June - September
Marsilea vestita	Hairy water-fern			3	Ponds, vernal pools, floodplains; Widespread and variable; in ponds and wet depressions and on river floodplains; 0 to 7,545 feet.	April - October
Myosurus sessilis	Sessile mousetail	SOC	С	1	Vernal pools and alkali flats at elevations of 33 to 5,249 feet.	March - May
Orobanche ludoviciana ssp. ludoviciana	Louisiana broomrape			2	Drier areas, often in sand, low to moderate elevations; parisitic. Open sandy areas at low elevations.	July - September
Penstemon deustus var. variabilis	Hot-rock penstemon			1	Dry foothills and lowlands, on open, dry, thin soils over basalt.	June - July
Symphyotrichum ericoides var. pansum	White heath aster			3	Open, wet or dry places in the valleys and plains; tolerant of alkali.	July - September
Thelypodium sagittatum ssp. sagittatum	Arrow thelypody			3	Moist swales and meadows in sagebrush plains and scablands and moist alkaline meadows and salt flats that dry by mid- summer.	June - July
Trifolium douglasii	Douglas' clover	SOC		1	Moist to wet open meadows, forested wetlands, and stream banks.	June - July
<sup>1</sup> Federal: SOC = Species of Concern: State: T= Thre	eatened C = Candidate					•

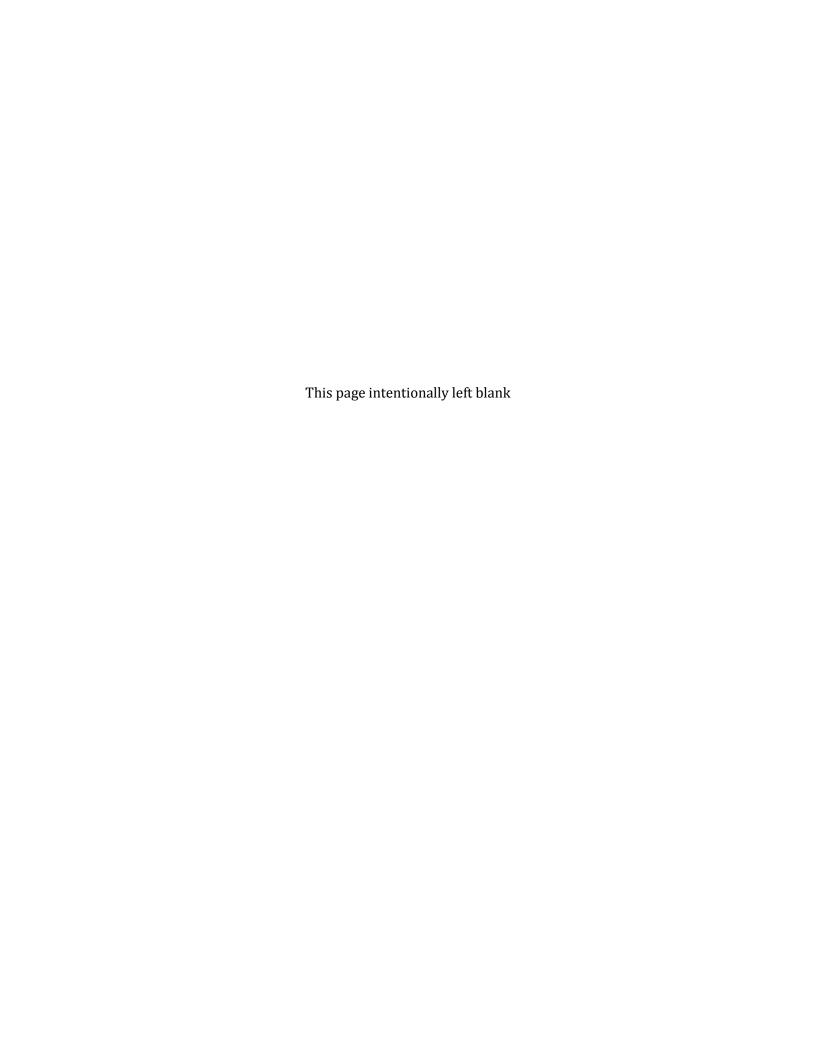
<sup>&</sup>lt;sup>1</sup>Federal: SOC = Species of Concern; **State**: T= Threatened, C = Candidate

<sup>&</sup>lt;sup>2</sup>ORBIC List: 1=Threatened or endangered throughout range, 2=Threatened or endangered in Oregon but secure elsewhere, 3=Review, 4=Watch, 2-ex=Extirpated in Oregon, secure or abundant elsewhere

<sup>&</sup>lt;sup>3</sup>Resources: http://oregonflora.org/rareplants.php, http://biology.burke.washington.edu/herbarium/imagecollection.php, http://www.dnr.wa.gov/NHPfieldguide, http://www.efloras.org/, http://inr.oregonstate.edu/sites/inr.oregonstate.edu/files/2016-rte-book.pdf, http://www.oregon.gov/ODA/programs/PlantConservation/Pages/ListedPlants.aspx



## Attachment 2. Vascular Plant Species Observed within the Project Area



				Non-	Noxious Weed Designation	
CIENTIFIC NAME	COMMON NAME	FAMILY	TYPE	native	State <sup>1</sup> / Umatilla County <sup>2</sup>	Synonyms and Notes
chillea millefolium	yarrow	Asteraceae	Forb	both	<u> </u>	
goseris heterophylla	annual agoseris	Asteraceae	Forb			
maranthus albus	white pigweed, tumbling pigweed	Amaranthaceae	Forb	Х		
mbrosia acanthicarpa	bur ragweed, annual bursage	Asteraceae	Forb			
msinckia lycopsoides	bugloss fiddleneck, tarweed fiddleneck	Boraginaceae	Forb			
rtemisia tridentata ssp. tridentata	big sagebrush, basin big sagebrush	Asteraceae	Shrub			
stragalus sclerocarpus	stalked-pod milkvetch, The Dalles milkvetch	Fabaceae	Forb			ORBIC List 4
stragalus succumbens	Columbia milkvetch, crouching milvetch	Fabaceae	Forb			ORBIC List 4
assia scoparia	mock cypress, burning bush, kochia	Amaranthaceae	Forb	Х	List B / List B	Kochia scoparia
romus hordeaceus	soft brome, soft chess	Poaceae	Graminoid	Х		B. mollis
romus tectorum	cheatgrass	Poaceae	Graminoid	Х		
enchrus longispinus	longspine sandbur	Poaceae	Graminoid	X		
entaurea solstitialis	yellow starthistle	Asteraceae	Forb	X	List B / List B	
hamaesyce glyptosperma	ribseed sandmat, ridge-seded spurge	Euphorbiaceae	Forb		Elot B / Elot B	Euphorbia glyptosperma
Chenopodium album	lamb's quarter, pigweed	Amaranthaceae	Forb	X		Laphornia gryptosperma
hondrilla juncea	rush skeletonweed	Asteraceae	Forb	X	List B, List T / List A	
hrysothamnus viscidiflorus	green rabbitbrush, yellow rabbitbrush	Asteraceae	Shrub	^	LISUD, LISUT / LISUA	
,	Canadian fleabane, horseweed		Forb		+	
onyza canadensis	·	Asteraceae				
escurainia pinnata	western tansymustard	Brassicaceae	Forb			Aster canescens, Machaeranthera canescens
ieteria canescens var. canescens	hoary aster, hoary tansyaster	Asteraceae				Aster canescens, Machaeranthera canescens
pilobium brachycarpum	tall annual willowherb	Onagraceae	Forb			Observed the served of the ser
ricameria nauseosa	rubber rabbitbrush, gray rabbitbrush	Asteraceae	Shrub			Chrysothamnus nauseosus
rigeron filifolius	threadleaf fleabane	Asteraceae	Forb			
rigeron pumilus	shaggy fleabane	Asteraceae	Forb			
rodium cicutarium	redstem stork's bill, red-stemmed filaree	Geraniaceae	Forb	X		
estuca idahoensis	Idaho fescue	Poaceae	Graminoid			
esperostipa comata ssp. comata	needle-and-thread	Poaceae	Graminoid			Stipa comata
eterotheca villosa var. villosa	hairy goldaster	Asteraceae	Forb			
olosteum umbellatum	jagged chickweed	Caryophyllaceae	Forb	X		
ordeum murinum	mouse barley, wall barley, hare barley	Poaceae	Graminoid	X		
actuca serriola	prickly lettuce	Asteraceae	Forb	X		
agophylla ramosissima	slender hareleaf, branched lagophylla	Asteraceae	Forb			
ogfia arvensis	field filago	Asteraceae	Forb	X		Filago arvensis
lalva neglecta	common mallow, dwarf mallow	Malvaceae	Forb	Х		
ledicago sativa	alfalfa	Fabaceae	Forb	Х		
lelilotus officinalis	sweetclover	Fabaceae	Forb	Х		
enothera pallida ssp. pallida	whitestem evening primrose	Onagraceae	Forb			
nopordum acanthium	Scotch thistle	Asteraceae	Forb	Х	List B / List B	
lantago lanceolata	English plantain	Plantaginaceae	Forb	Х		
lantago patagonica	woolly plantain, Indian wheat	Plantaginaceae	Forb			
oa bulbosa	bulbous bluegrass	Poaceae	Graminoid	х		
oa secunda	Sandberg's bluegrass	Poaceae	Graminoid			
Polygonum aviculare	prostrate knotweed	Polygonaceae	Forb	х		
Purshia tridentata	bitterbrush	Rosaceae	Shrub	,		
alsola tragus	prickly Russian thistle	Amaranthaceae	Forb	Х		S. kali
ecale cereale	cereal rye, rye	Poaceae	Graminoid	X	not listed / List B	
etaria viridis var. viridis	green bristlegrass	Poaceae	Graminoid	X	Hotod / Elot B	
symbrium altissimum	tumble mustard, tall tumblemustard	Brassicaceae	Forb	X		
porobolus cryptandrus	sand dropseed	Poaceae	Graminoid	^		
.,	stiff branched wirelettuce				+	
tephanomeria paniculata		Asteraceae	Forb			
araxacum officinale	common dandelion	Asteraceae	Forb	X		
ragopogon dubius	yellow salsify	Asteraceae	Forb	Х	1: (5/1: (5	
"	puncturevine, goat's head	Zygophyllaceae	Forb	Х	List B / List B	
ribulus terrestris riticum aestivum licia americana var. americana	wheat American vetch	Poaceae Fabaceae	Graminoid Forb	Х		

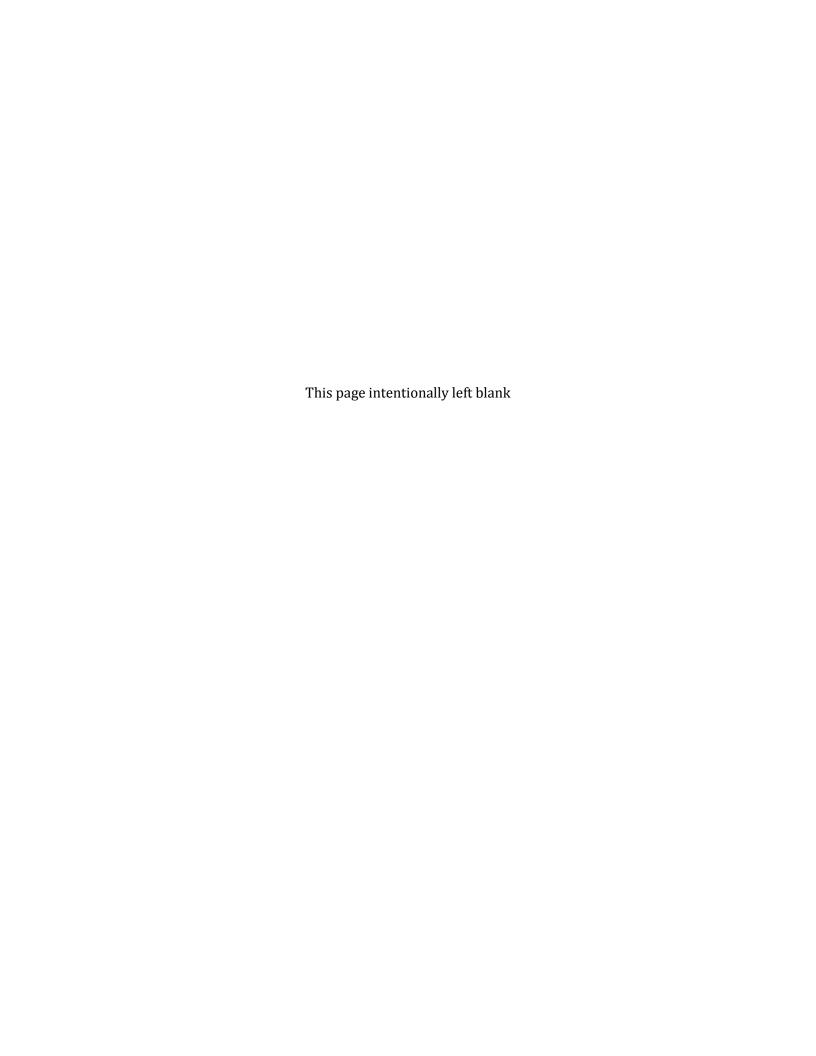
List B = A weed of economic importance which is regionally abundant, but which may have limited distribution in some counties. Recommended action: Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

<sup>&</sup>lt;u>List T</u> = A designated group of weed species that are selected and will be the focus for prevention and control by the Noxious Weed Control Program. Action against these weeds will receive priority. T-designated noxious weeds are determined by the Oregon State Weed Board and directs ODA to develop and implement a statewide management plan. T-designated noxious weeds are species selected from either the A or B list (ODA 2019).

List A = weeds that have been ffound as siingle plants or iin verry limited populations in the county. Prevention, early detection and eradication is high priority. Cost shares may be available at the Weed Board discretion. Recomended Action: Infestations are subject to intensive control when and where found.

List B = weed of known economic importance which is regionally abundant, but which may have limited distribution in some counties. Where implementation of a fully integrated statewide management plan is feasible, biological control shall be the main control for species for which bilogical agents are available. Recommended action: Limited to intensive control at state or county level as determined on a case-by-case basis.







**Photo 1.** Shrub-steppe habitat in northwestern portion of Survey Area with abundant yellow starthistle (*Centaurea solstitialis*) in foreground.



**Photo 2.** Shrub-steppe habitat in south-central portion of Project Area.



**Photo 3.** Heavy cover of cereal rye (*Secale cereale*) and prickly lettuce (*Lactuca serriola*) in grassland habitat.



**Photo 4.** Heavy cover of yellow starthistle in grassland habitat (foreground), with shrub-steppe habitat in the background.



Photo 5. Columbia milkvetch (Astragalus succumbens) in fruit.

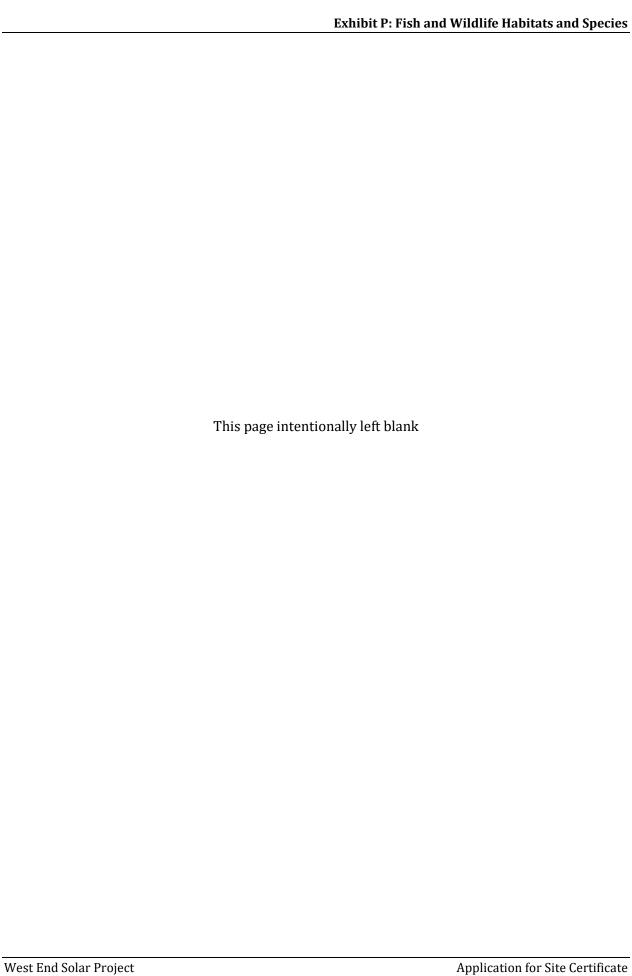


Photo 6. Stalked-pod milkvetch (Astragalus sclerocarpus) in foreground and habitat.



**Photo 7.** Stalked-pod milkvetch with denuded stems and only a few fruits remaining.

## Attachment P-3. 2019-2020 Wildlife and Habitat Survey Report



# 2019-2020 Wildlife and Habitat Survey Report West End Solar Project

**Prepared for** 



**Eurus Energy America, LLC** 

Prepared by



Tetra Tech, Inc.

September 2020

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#### 1.0 Introduction

Eurus Energy America LLC (Eurus) contracted Tetra Tech, Inc. (Tetra Tech) to conduct biological surveys in support of the West End Solar Project (Project), a proposed solar project in Umatilla County, Oregon. The Project is located on approximately 324 acres of private land roughly 1 mile east of the City of Hermiston bound by Canal Road on the west, South Edwards Road on the east, and agricultural fields to the north and south (Project Area; Figure 1).

This summary report presents the methods and results for the biological surveys conducted in April and May 2019, and March and May 2020 (Figure 1). The purpose of these surveys was to identify the presence of special status species and their habitats, including the state endangered Washington ground squirrel (WAGS; *Urocitellus washingtoni*), document the type and quality of wildlife habitat at the Project according to Oregon Department of Fish and Wildlife (ODFW) guidelines, and identify the presence of raptor nests in the vicinity of the Project Area. The Project Area was expanded following surveys in 2019, which resulted in the need for additional surveys in 2020 (Figure 1).

The following biological surveys were performed during April and May of 2019 and March and May of 2020:

- WAGS surveys;
- Habitat categorization surveys;
- General wildlife surveys; and
- Raptor nest surveys.

Rare plant surveys are addressed in a separate report.

#### 2.0 Survey Area

The WAGS surveys encompassed the Project Area plus an approximately 1,000-foot buffer in suitable habitat, which excluded active agricultural and developed areas; suitable habitat was also excluded where separated from proposed ground disturbance by a habitat barrier such as a paved road (Figure 2; ODFW 2020). The survey area for habitat and general wildlife surveys consisted of the Project Area, which encompasses the proposed solar array and associated facilities (Figure 3). The raptor nest surveys encompassed the Project Area, as well as an additional 0.5-mile buffer of the Project Area (Raptor Nest Survey Area; Figure 2). The scope, timing, and extent of these surveys was informed by correspondence with ODFW (ODFW 2019a, 2020).

#### 3.0 Methods

#### 3.1 Washington Ground Squirrel Surveys

WAGS occur only in the Columbia Basin of eastern Washington and north-central Oregon. WAGS are a small ground squirrel associated with shrub-steppe habitats of the Columbia Basin Ecoregion (Verts and Carraway 1998). In Oregon, the WAGS range extends from Umatilla County, west through Gilliam and Morrow counties, to the John Day River. Concern for the long-term viability of WAGS populations led to their listing by ODFW as endangered in January 2000. On September 21, 2016, the US Fish and Wildlife Service (USFWS) announced that listing the WAGS as endangered under the federal Endangered Species Act of 1973 was not warranted (USFWS 2019). The objective of these surveys was to identify WAGS colonies within the WAGS Survey Area, so that impacts to WAGS may be avoided or minimized.

Prior to fieldwork, field personnel visited an active WAGS colony and received training on burrow, scat, alarm call, and squirrel identification, as well as guidance on the natural history, habitat, and survey protocol for WAGS. All field crew members also passed a hearing test to verify they were capable of hearing a frequency of 8 kilohertz, the typical frequency of alarm call vocalizations of ground-dwelling squirrels. The WAGS is the only species of ground squirrel known to occur in the vicinity of the Project Area; therefore, confusing this species for similar species such as Belding's ground squirrel is highly unlikely. Additionally, WAGS have scat that can be differentiated from other burrowing animals by its characteristic size and shape.

The surveys followed methodology generally consistent with the protocol developed in the *Status and Habitat Use of the WAGS on State of Oregon Lands, South Boeing, Oregon* (Morgan and Nugent 1999). The WAGS protocol requires two phases of surveys to increase the likelihood of detecting their presence. The first phase of surveys begins as early as late March or early April, with the next phase following at least 2 weeks later and completed by the end of May or early June, to assure surveys are conducted prior to WAGS going into aestivation. The survey period corresponds to the time when juvenile squirrels emerge from the burrows and are most active, and thus when alarm calls are most frequent (Morgan and Nugent 1999). WAGS surveys are conducted by walking meandering transects spaced at approximately 165 feet. Biologists were assigned to document any sign of WAGS (burrows, scat, sign of fresh activity, sightings, and vocalizations) while walking the transects and stopping periodically to listen for squirrel calls.

Following the protocol of Morgan and Nugent (1999), surveys are conducted in the morning, beginning at least 1 hour after sunrise to allow for temperatures to increase sufficiently to support WAGS activity, and typically end in the early afternoon to avoid the late afternoon heat, which decreases the WAGS activity. Whenever potential WAGS sign is identified, the area immediately surrounding the sign is intensively searched for more sign by walking around the location in an outward spiral.

According to Morgan and Nugent (1999), a colony is defined by the observation of one or more WAGS observation types (auditory, visual or droppings), along with squirrel burrows of the

accurate shape and size for WAGS. If a colony is found, the information recorded must include the locations of activity centers and the colony boundary using a sub-meter accuracy GPS unit, as well as habitat characteristics, approximate number of burrows, the time, weather, and observation types when a colony is first discovered, and representative photographs of burrows, scat, and habitat.

The second phase of surveys follows the same method, except that the transects are offset between the first phase of transects as to allow for higher likelihood of detection. Additionally, during the second phase of surveys, while approaching a potential burrow identified from the first phase of surveys, surveyors approach the burrow perpendicular to that of the first phase to increase the likelihood of WAGS detection. The approach direction is changed to account for topography and prevailing winds, which may affect detectability of WAGS from a given direction.

Tetra Tech conducted a preliminary desktop review of habitat to determine potential suitability for WAGS prior to field surveys. Areas considered unsuitable habitat for WAGS include active agricultural areas and developed areas (ODFW 2019a). WAGS surveys are required within 1,000 feet of potential ground disturbance in suitable habitat, but this extent is limited by paved roads, which are considered a barrier to WAGS (ODFW 2019a, 2020). South Edwards Road is a paved road; therefore, habitat east of the road was not included in the WAGS Survey Area, and is not considered further in this report (Figure 2). Prior to commencing surveys, Tetra Tech obtained approval from ODFW on the WAGS protocol for the Project including survey dates (ODFW 2019a, 2020).

ODFW recognizes protocol WAGS surveys for a period of three years. Typically, if construction begins within three years of conducting protocol-level surveys, but not within one year of these surveys, a pre-construction survey is required only within areas of suitable Washington ground squirrel habitat where ground disturbing activity would occur. Therefore, the results of these surveys are considered valid for three years with 2019 surveys expiring in May of 2022, and 2020 surveys expiring in May of 2023.

#### 3.2 Habitat Categorization Surveys

Tetra Tech conducted an initial preliminary desktop review of habitat at the Project in 2018 (Tetra Tech 2018), reviewing publicly available sources from USFWS, the National Wetlands Inventory (NWI; USFWS 2018), National Hydrography Dataset (NHD; USGS 2001), National Land Cover Database (NLCD; Homer et al. 2015), the Oregon Conservation Strategy (OCS 2016), State Land and Water Resource Plans, the Oregon Biodiversity Information Center (ORBIC; ORBIC 2018), *NW Regional Gap Analysis Project* (Aycrigg et al. 2013), Oregon Department of Agriculture (ODA), ODFW, StreamNet (2018), U.S. Geological Survey (USGS), and Umatilla County, including soils information, land use classification, fish and wildlife habitat conservation areas, locations of sensitive habitats and species, and hydrologic features. Aerial photography and topographic maps were also reviewed to assess existing habitat. Tetra Tech conducted a reconnaissance-level site visit on October 31, 2018 to field-verify the biological and water resource desktop information, as reported in a Site Characterization Report (Tetra Tech 2018).

In May 2019 and May 2020, Tetra Tech conducted habitat surveys concurrent with WAGS surveys, as discussed with and approved by ODFW (ODFW 2019a, 2020). The objective of the surveys was to categorize habitat within the Project Area (324 acres; Figure 3) per the habitat categories set forth in OAR 635-415-0025. Habitat boundaries were digitized using GPS-enabled tablets, and information on habitat such as dominant vegetation, existing disturbance, and any sensitive species or habitat features observed were collected.

In the field, two biologists delineated areas of relatively homogenous vegetation and characterized the composition and structure of habitat, with a minimum mapping unit of 1-acre, and recorded this information on a field datasheet (Attachment 1). Each delineated vegetation polygon was assigned a habitat type, subtype, and habitat quality category guided by the habitat categorization table (Attachment 2). Data characterizing a particular habitat type and quality represented the average condition of all such polygons.

#### 3.3 General Wildlife Surveys

Prior to conducting field surveys in both 2019 and 2020, Tetra Tech conducted a desktop review to identify special-status wildlife species with the potential to occur at the Project, including federal and state endangered, threatened, proposed, and candidate species; species of concern; birds of conservation concern; sensitive and sensitive-critical species; and Oregon Conservation Strategy species (Attachment 3; OCS 2016, ODFW 2016, ODFW 2018, ODFW 2019b, ORBIC 2016, ORBIC 2018, ORBIC 2019, USFWS 2008, USFWS 2019, USFWS 2020, Wildlife Explorer 2020). Tetra Tech reviewed habitat and range information for special-status wildlife species known to occur in Umatilla County and the Columbia Plateau/Columbia Basin to develop the list of species that had the potential to occur at the Project (Attachment 3). Species were eliminated from consideration if their habitat was absent from the Project Area, or their range did not overlap with the Project Area. The list includes state-sensitive species associated with habitat types identified during the preliminary desktop review and the October 2018 site visit, including the long-billed curlew (Numenius americanus), sagebrush sparrow (Artemisiospiza nevadensis), and grasshopper sparrow (Ammodramus savannarum), as requested by ODFW (Tetra Tech 2018, ODFW 2019a).

Concurrent with WAGS and habitat categorization surveys during April and May of 2019 and March and May of 2020, Tetra Tech documented general wildlife and special-status species use of the Project Area. Spring surveys coincide with the period of highest biological activity of neotropical migrant and breeding birds, foraging and breeding animal species, and other taxa. For instance, long-billed curlews arrive at the nearby Umatilla National Wildlife Refuge on March 15 each year, plus or minus 2 days (ODFW 2019a), and were therefore likely to be detected during this timeframe if present in the Project Area.

#### 3.4 Raptor Nest Surveys

Prior to conducting field surveys, Tetra Tech reviewed aerial photography and the results of a records request to ORBIC (2018) to identify potential raptor nesting structures in the vicinity of the Project. Tetra Tech conducted ground-based raptor nest surveys concurrent with the April 2019

and May 2020 WAGS surveys, to document active and inactive raptor nests within the Project Area plus an approximately 0.5-mile buffer as discussed with ODFW (Raptor Nest Survey Area, 1,765 acres; Figure 2; ODFW 2019a). The biologists drove public roads to search for raptor nests outside the Project Area, but which were within the 0.5-mile buffer, and walked to any potential nesting structures not visible from public roads, land access permitting. If a nest was found, the biologists documented the location via GPS-enabled tablets, as well as nest status, size class, condition, substrate, height, exposure, as well as the nesting species and number of eggs or young, observed during surveys.

#### 4.0 Results

#### 4.1 Washington Ground Squirrel Surveys

A preliminary desktop review indicated the presence of approximately 388 acres of potentially suitable habitat for WAGS within the WAGS Survey Area. During the desktop review, Tetra Tech excluded approximately 268 acres of likely Category 6 habitat from consideration as suitable habitat for WAGS, primarily consisting of active agricultural fields. ORBIC records indicated two historic records of this species occurring within 2 miles of the Project, most recently in 1979 (ORBIC 2018). One of these records overlaps with the Project Area.

On April 22 and 23, May 21 and 22, 2019, and March 22, May 9 and 10, 2020, two biologists conducted WAGS surveys on 349 acres within the WAGS Survey Area (Figure 2). In the field, surveyors verified the status of Category 6 habitat identified during desktop review, and mapped active agricultural areas and developed areas, including a water treatment pond, as well as areas separated from the Project Area by a habitat barrier. The Category 6 areas were confirmed as not suitable for WAGS, and were therefore excluded from field surveys. Biologists delineated suitable habitat using electronic tablets. Due to access restrictions outside the Project Area, areas of potentially suitable WAGS habitat within the 1,000-foot buffer were not surveyed (approximately 39 acres); this habitat not accessible during field surveys but contiguous with the Project Area is analyzed for suitability to WAGS in a separate memo.

Biologists did not observe any active WAGS colonies within the WAGS Survey Area. A total of 22 small burrows appropriate for use by small mammals and beetles were identified at five locations; however, no WAGS were detected calling, nor was any scat found during either phase of both 2019 and 2020 WAGS surveys. Beetles were observed using burrows at each of the five locations.

#### 4.2 Habitat Categorization Surveys

On May 21 and 22, 2019, and May 9 and 10, 2020, two biologists completed habitat categorization surveys within the Project Area. The Project Area is primarily composed of Category 4 and 5 Eastside Grassland (139 and 161 acres, respectively; Figure 3) with two smaller areas of Category 3 Shrub-steppe (20 acres; Figure 3). There are also several small areas of Category 6 Orchards, Vineyards, Wheat Fields, Other Row Crops (4 acres; Figure 3) where agricultural fields on adjacent properties extend into the Project Area. Category 3 habitat is defined as, "essential habitat, or

important and limited habitat", Category 4 habitat as "important habitat", Category 5 as "habitat for fish and wildlife having high potential to become either essential or important habitat", and Category 6 as "habitat that has low potential to become essential or important habitat for fish and wildlife" (OAR 635-415-0025). The Project Area is bordered by gravel roads, paved roads, two-track roads, a waste-water treatment pond, and active row-crops (Photo 1, Attachment 4).

The Category 4 area of Eastside Grassland is primarily composed of non-native cereal rye (*Secale cereale*), cheatgrass (*Bromus tectorum*), and bulbous bluegrass (*Poa bulbosa*). Subdominant species for the Category 4 area are a mix of natives and non-natives, including, fiddleneck (*Amsinckia* sp.), yarrow (*Achillea millefolium*), wooly plantain (*Plantago patagonica*), yellow starthistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), tumble mustard (*Sisymbrium altissimum*), salsify (*Tragopogon* sp.), Russian thistle (*Salsola* sp.), and stork's bill (*Erodium cicutarium*; Photo 2, Attachment 4).

The Category 5 area of Eastside Grassland is dominated by cheatgrass (*Bromus tectorum*). Subdominant species for the Category 5 area is mostly composed of cereal rye, Russian thistle, yellow starthistle, salsify, and stork's bill (Photo 3, Attachment 4). Both areas of Eastside Grassland include scattered native shrubs such as green rabbitbrush (*Chrysothamnus viscidiflorus*) and rubber rabbitbrush (*Ericameria nauseosa*). In addition, scattered big basin sagebrush (*Artemisia tridentata*) was observed in the Category 4 area of Eastside Grassland, primarily in proximity to the areas of Category 3 Shrub-steppe. Disturbance within the Eastside Grassland habitat subtype included invasive plants and two-track roads, as well as existing transmission lines. Sensitive species observed in Eastside Grassland areas in 2019 include long-billed curlews and Swainson's hawks (*Buteo swainsoni*). No sensitive species were observed in Eastside Grasslands in 2020.

The two small areas of Category 3 Shrub-steppe are composed primarily of mature, big basin sagebrush, with subdominant shrub species rubber rabbitbrush and green rabbitbrush (Photo 4, Attachment 4). Scattered bitterbrush (*Purshia tridentata*) shrubs were also observed in the northern area of Shrub-steppe. The dominant understory species in the areas of Shrub-steppe is cheatgrass, with a subcanopy layer composed of both native and non-native species including Sandberg's bluegrass (*Poa secunda*), yarrow, fiddleneck, needle and thread grass (*Hesperostipa comata*), wooly plantain, bulbous bluegrass, salsify, prickly lettuce, and cereal rye. In addition to the previously noted disturbances around the edges of the Project Area, these areas also harbor glass bottles, metal cans, household appliances and other discarded items. No special-status species were observed in the Shrub-steppe area at ground level, however Swainson's hawks were observed in flight during 2019 surveys (Figure 3).

As described above, habitat at the Project meets the definition of Categories 3, 4, 5, and 6 as defined in OAR 635-415-0025. The mitigation goal for Category 3 habitat is no net loss of habitat quantity or quality, with a mitigation strategy of in-kind and in-proximity mitigation. The mitigation goal for Category 4 habitat is also no net loss in habitat quantity or quality, while mitigation may be in-kind or out-of-kind, and in-proximity or off-proximity. The mitigation goal for Category 5 habitat is to provide a net benefit in habitat quantity or quality. The mitigation goal for Category 6 habitat is to minimize impacts. Permanent impacts to Category 3 and 4 habitats are typically mitigated for at a

1:1 ratio in order to meet ODFW Fish and Wildlife Habitat Mitigation Policy goals. Permanent impacts to Category 5 habitat are typically mitigated for at a ratio of less than one acre of mitigation for each acre permanently impacted in order to meet ODFW Fish and Wildlife Habitat Mitigation Policy goals. Impacts to Category 6 habitat do not require mitigation.

#### 4.3 General Wildlife Surveys

On April 22 and 23, May 21 and 22, 2019, and March 22, May 9 and 10, 2020, Tetra Tech documented general wildlife and special-status species use of the Project Area, concurrent with WAGS and habitat categorization surveys. Tetra Tech observed 44 bird species (Attachment 5), including three special-status: long-billed curlew, Swainson's hawk, and grasshopper sparrow (Figure 3; Table 1).

During May 2019 surveys, two long-billed curlews flushed upon approach, vocalized briefly, flew, and were not observed again. In 2019, one additional long-billed curlew was observed flying. During May 2020 surveys, one long-billed curlew was observed flying and calling, within the 0.5-mile buffer east of the Project Area. This species typically performs flight displays and mobbing behavior, and persistently vocalizes towards potential predators approaching nest sites or broods (Dugger and Dugger 2002). These behaviors were not observed within the Project Area; therefore, it is unlikely that long-billed curlews were using the Project Area for breeding, but rather they were likely foraging.

A total of three grasshopper sparrows were heard singing and/or observed flying during 2019 surveys. During 2019 surveys, one Swainson's hawk was observed displaying potential courtship behavior, when an adult individual was observed swooping towards another individual (Bechard et al. 2010); however, no Swainson's hawk nests were found during raptor nest surveys. Five additional Swainson's hawks were observed during surveys in 2019, three of which were outside of the Project Area; no Swainson's hawks were observed during surveys in 2020. A flyover Caspian tern (*Hydroprogne caspia*) was observed on May 22, 2019. This species is not sensitive in the Columbia Plateau Ecoregion but is sensitive in other ecoregions. This tern nests in colonies on sparsely vegetated islands; this habitat is not available in the Project Area (Cuthbert and Wires 1999).

Table 1. Special-Status whulfie Species Observed During Surveys							
Scientific Name	Common Name	Taxa	Federal <sup>1</sup>	Oregon <sup>2</sup>			
Ammodramus savannarum	grasshopper sparrow	Bird	-	S, CSS			
Buteo swainsoni	Swainson's hawk	Bird	-	S, CSS			
Numenius americanus	long-billed curlew	Bird	BCC	SC, CSS			

Table 1. Special-Status Wildlife Species Observed During Surveys

Sources: OCS 2016, ODFW 2016, ODFW 2018, ODFW 2019b, ORBIC 2016, ORBIC 2018, ORBIC 2019, USFWS 2008, USFWS 2019, USFWS 2020, Wildlife Explorer 2020.

<sup>1.</sup> Federal Status: BCC = Bird of Conservation Concern.

<sup>2.</sup> ODFW Status in the Columbia Plateau: SC = Critical Sensitive Species, S = Sensitive Species. CSS = Conservation Strategy Species.

#### 4.4 Raptor Nest Surveys

On April 22 and 23, 2019 and May 9 and 10, 2020, Tetra Tech conducted raptor nest surveys concurrent with WAGS surveys. Tetra Tech did not document any active or inactive raptor nests within the Raptor Nest Survey Area. During 2019 surveys, one active American kestrel (*Falco sparverius*) cavity nest was observed outside the Raptor Nest Survey Area, in a field with a stand of dead trees (laying on the ground and standing), approximately 0.7 miles southwest of the Project Area (Figure 2). The dead trees had various available cavities suitable for American kestrels to nest, but only one pair displayed aggressive behavior towards surveyors (diving and calling), indicative of nest defense (Smallwood and Bird 2002).

During the 2019 raptor nest survey, several kestrels were also observed flying into the cavities of transmission line marker balls, along a transmission line that runs north-south along Canal Road, adjacent to the western border of the Project Area. This transmission line is within the Raptor Nest Survey Area. Kestrels have been documented using natural cavities (for example, holes in trees excavated by woodpeckers), cavities in buildings, and nest-boxes provided by humans; however, use of transmission marker balls as nest sites has not been documented (Smallwood and Bird 2002). Kestrels are known to compete with European starlings (*Sturnus vulgaris*) for nest-boxes. Starlings were observed entering the marker balls as well, but not observed carrying any nesting material, food, or fecal sacs into the marker balls. During the ground-based raptor nest surveys, direct observation of the interior of these cavities was not possible. Kestrels do no improve nest sites with nesting material (Smallwood and Bird 2002); therefore, nesting activity in these structures during raptor nest surveys could only have been confirmed if an adult American kestrel was observed carrying prey into a ball. This behavior was not observed; therefore, nesting activity in these structures is unlikely. The activity of these Kestrels were not confirmed in 2020 as this area was not within the 2020 Raptor Nest Survey Area (Figure 1).

During May 2019 WAGS surveys (after raptor nest surveys were complete), two owl pellets and a rodent carcass were observed on the ground near a tarped haystack within the Raptor Nest Survey Area (Photos 5 and 6). Barn owls (*Tyto alba*) commonly nest and roost in cavities in hay stacks and are known to occur in the area (Marti et al. 2005, Sullivan et al. 2009). The condition of the rodent carcass indicates that it had been recently killed, suggesting use of the haystack within a 1 or 2 days of the observation (Photo 5). The breeding period for this species overlaps with the timing of surveys conducted at the Project in 2019. A cavity was observed in the hay stack by looking up under the tarp near the pellets, but it was too high and obscured by the tarp to directly investigate or photograph. This species is normally a strictly nocturnal species; therefore, barn owls were unlikely to be directly observed by biologists conducting surveys during daylight hours unless flushed from a roost. The number of items at the base of the hay-stack (two pellets, one carcass) does not suggest frequent, sustained use of this location consistent with nesting activity or repeated roosting behavior; however, this strongly suggests that barn owls may use the Project Area to hunt for small mammals. The area around this hay stack was not surveyed in 2020 as this area was not within the 2020 Raptor Nest Survey Area (Figure 1).

Tetra Tech was able to view the full extent of the 2019 to 2020 Raptor Nest Survey Area from public roads and accessible parcels; however, it is possible that active nests within the Raptor Nest Survey Area may have been out of view of surveyors due to factors such as distance, visibility, and access. For instance, a red-tailed hawk nest in a tree with dense cover may be hidden from view at a distance. Additionally, the nests of ground-nesting species such as northern harrier and burrowing owl are difficult to detect without direct, ground-based observation. However, raptor activity such as adult raptors travelling to and from active nests is often visible from a distance, and Tetra Tech did not observe any such activity beyond what is described above. No records of nesting raptors within the Raptor Nest Survey Area were returned from the ORBIC (2018) request.

#### 5.0 Summary and Conclusions

Tetra Tech did not observe any WAGS activity during surveys, and as a result no Category 1 or 2 WAGS habitat was mapped in the WAGS Survey Area. While no WAGS were observed during surveys, Tetra Tech observed low WAGS activity throughout the Columbia Plateau Ecoregion in Oregon during the 2019 and 2020 survey seasons. The low detection rates across the region in 2019 and 2020 may reflect poor overwinter survival and reproductive success due to late snow and heavy spring precipitation in 2019 (Yensen 2020, Wallis 2020). However, the results of surveys of the Project Area in 2019 and 2020 combined with the historic nature of the ORBIC records for this species in the area and the unsuitable habitat surrounding the Project (roads, active agriculture) indicate that the quality of habitat for WAGS in the Project Area is low.

Based on vegetative characteristics, Tetra Tech mapped three habitat subtypes and four categories within the Project Area: Category 4 and 5 Eastside Grassland, Category 3 Shrub-steppe, and Category 6 Orchards, Vineyards, Wheat Fields, Other Row Crops. Although these habitats may provide some value to wildlife, the Project Area is relatively disturbed, dominated by invasive annual species and subject to ongoing human disturbance. Three state-sensitive species were observed in the Project Area: grasshopper sparrows, long-billed curlews and Swainson's hawks. The presence of small burrows and observations of raptor species in and around the Project Area (Swainson's hawks, red-tailed hawks, American kestrels, northern harriers, and most likely barn owls) suggests use of the Project for hunting small mammals. However, no active raptor nests were documented within 0.5-miles of the Project Area (i.e., in the Raptor Nest Survey Area).

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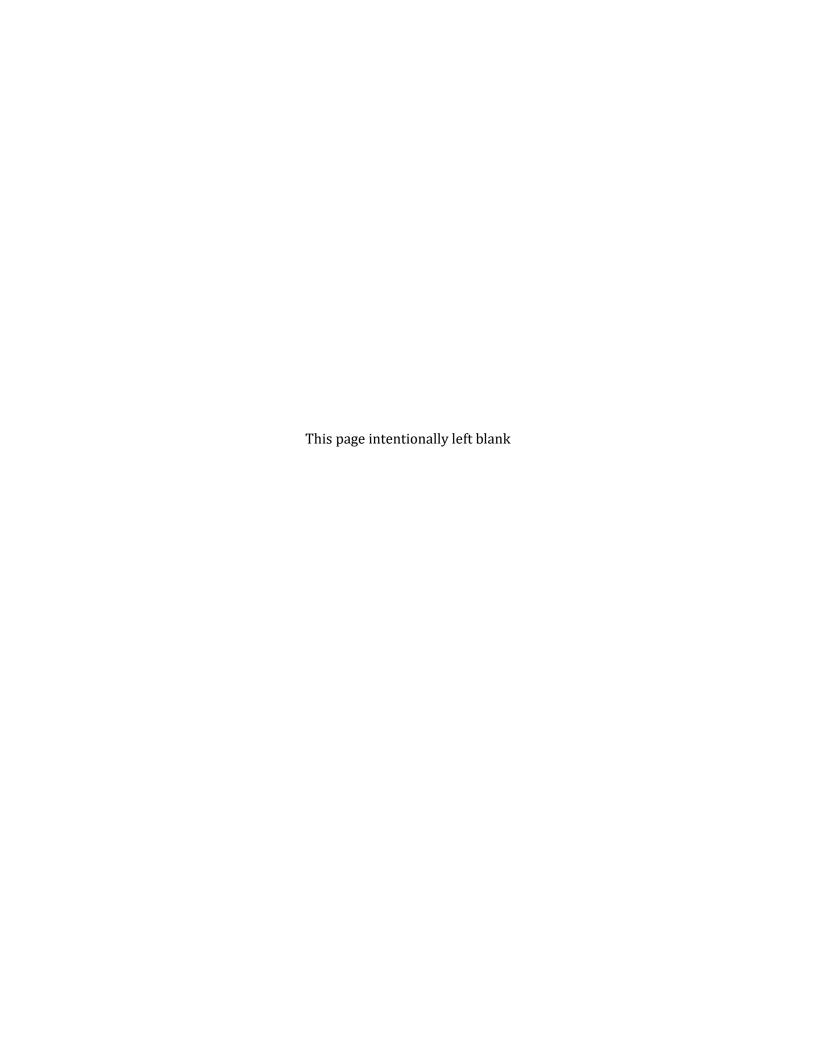
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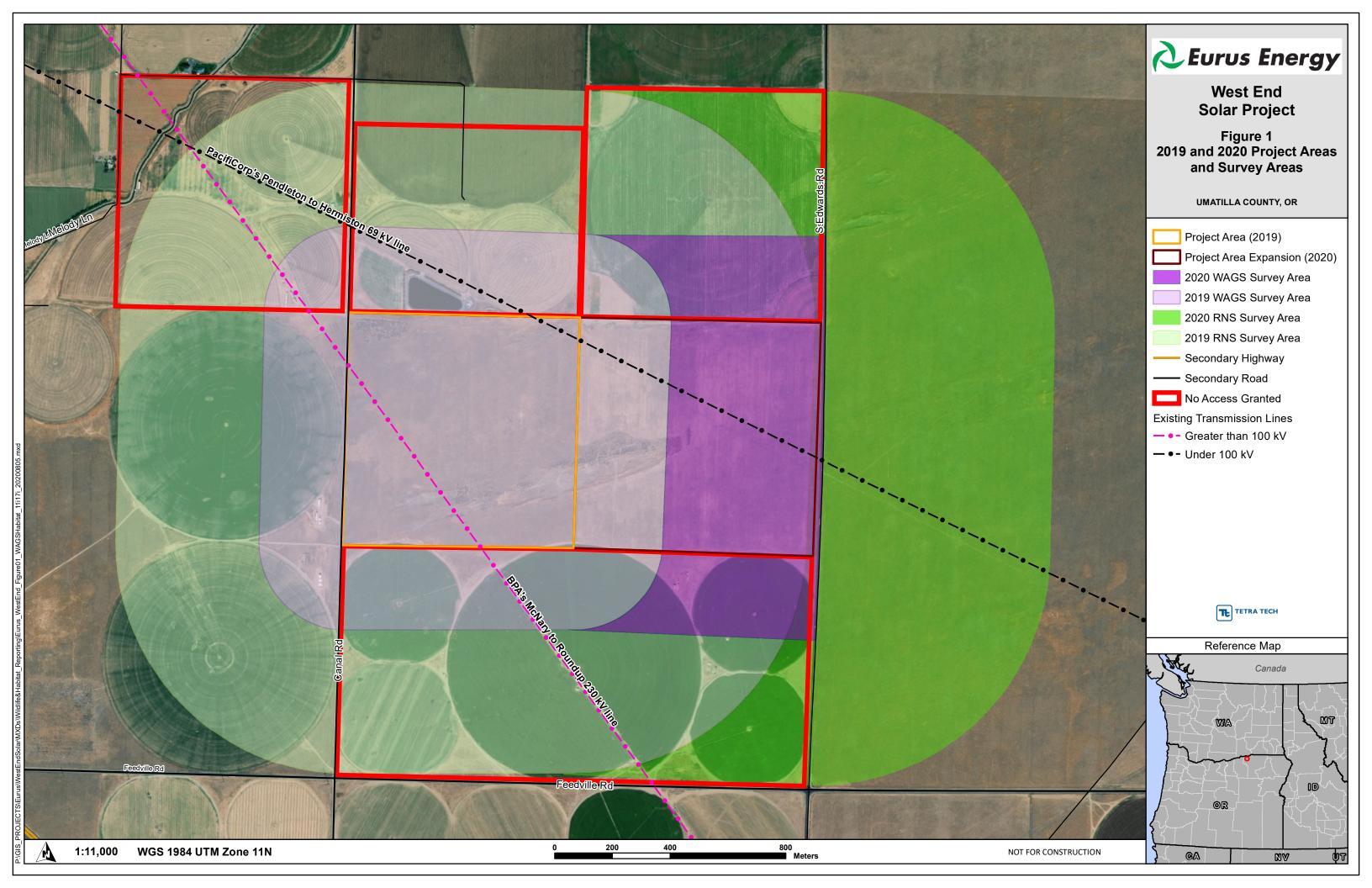
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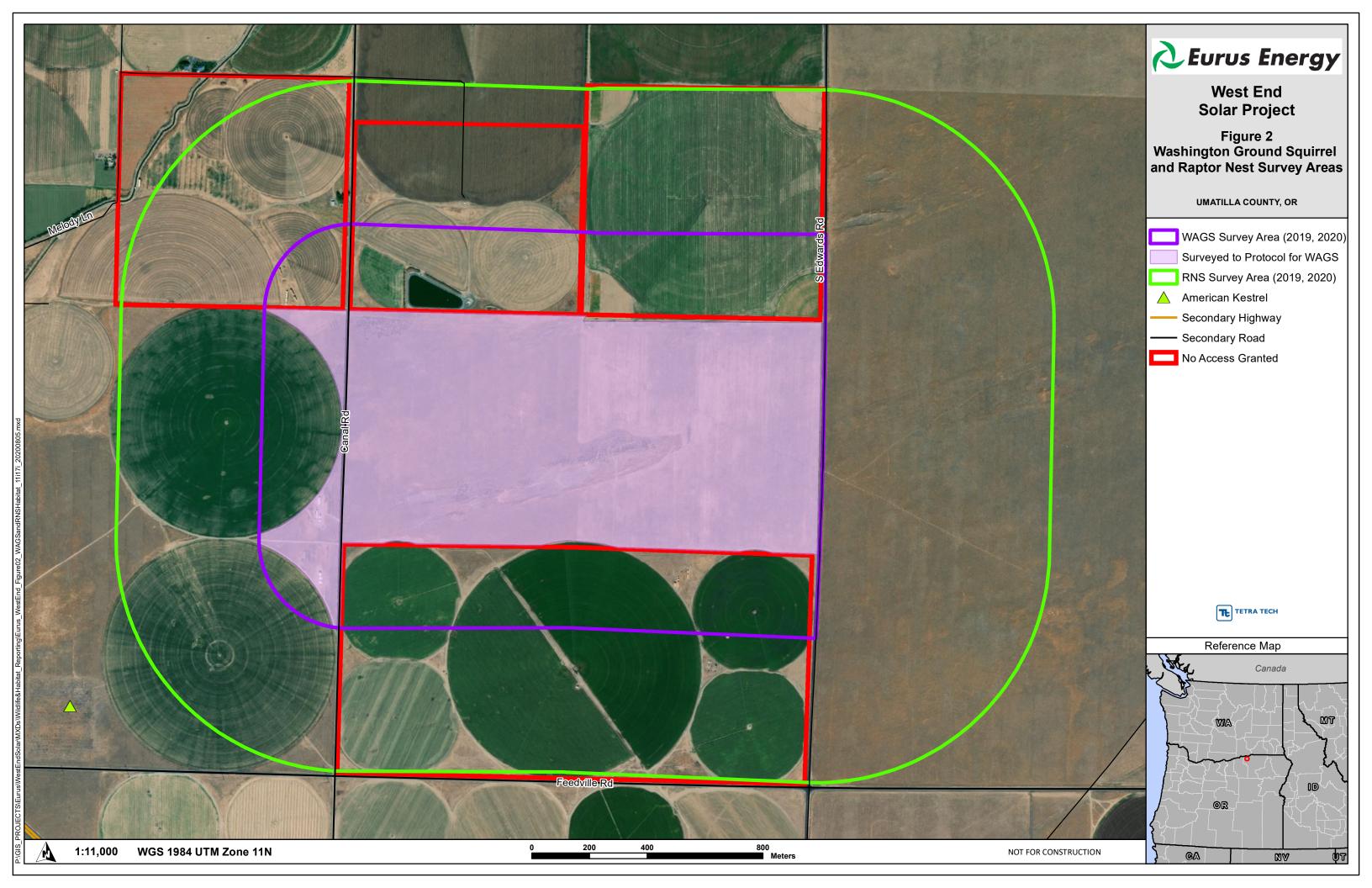
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# **Figures**



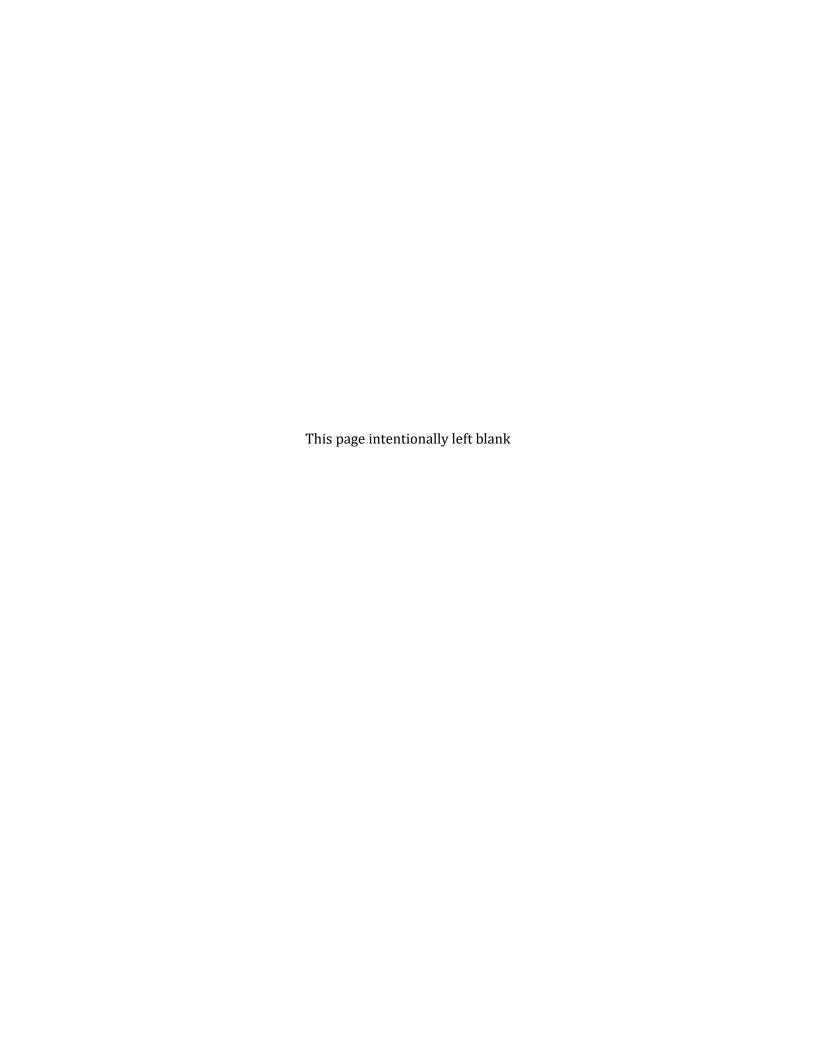








# Attachment 1. West End Solar Project Habitat Categorization Field Datasheet



Data	<b>Sheet</b>	Id:	
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## WEST END HABITAT CATEGORIZATION FIELD DATASHEET

HABITAT CATEGORY	
Date Surveyor	
Site description:  EFSC habitat type/subtype: (circle one habitat type and one subtype):	
Open water-lakes, rivers, streams: Permanent ponds/lakes(PL)/ Seasonal ponds(SP)/ Perennial(PS)/ Intermittent(IS) Wetlands: Emergent wetlands(EW)/ Scrub-shrub wetlands(SW)/ Forested wetlands(FW) Riparian forest and shrubland complexes: Eastside (interior) riparian(ER) Upland grassland, shrub-steppe and shrubland: Eastside grassland(EG)/ Shrub-steppe(SS) Upland forests and woodlands: Eastside oak and ponderosa pine forest and woodland(EO)/ Western juniper and mountain mahogany woodlands(JW) Agriculture, pasture, and mixed environs: Planted grasslands (PG)/ Orchards, vineyards, wheat fields, other row crops, irrigated poplar plantations(AG)/ Irrigated pastures and hay meadows(PA) Cliffs, caves and talus(CT) Urban and mixed environs(UR)	
Notes if confusion	П
Detailed vegetation measurements:	
**Dominant ≥20%, Subdominant 10-20%	
Trees Stage 3	
Dominant species Stage 3	age 4
Subdominant species	
Avg. dbh (in.) Canopy closure (%) No. subcanopy layers	a
Percent native cover Percent bare ground or duff 33-	Stag
Stumps present? Yes No	
Snags present? Yes No Snag stage (circle one) 1 2 3 4 5 Abundance/ac/ac	90
Forest phase per Brown: GF SHR OSP CSPS LGSAW OGDD  Figure 5.—Five stages of deterioration of Douglas-fir snags (adapted from Clinate. 1980).	ne et
Shrubs	
Dominant species	
Subdominant species	
Canopy closure (%) No. subcanopy layers	
Percent native cover Percent bare ground	
Percent crytobiotic crust (if applicable)	
Herbs & Grasses	
Dominant species  Subdominant species	
Subdominant species	
Canopy closure (%) No. subcanopy layers  Percent native cover: Percent bare ground or duff	
release thative cover refeelt date ground of duff	

Percent crytobiotic crust (if applicable)\_\_\_\_\_

#### **Other descriptions:**

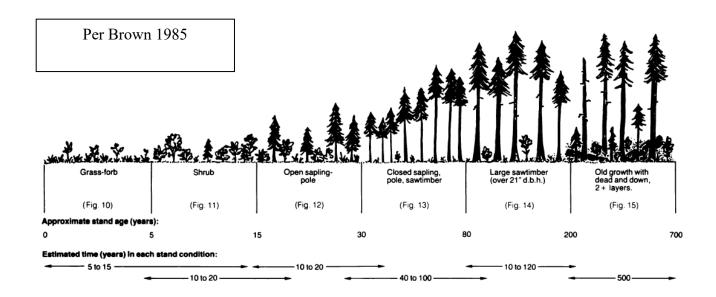
Disturbance type(s), check all that apply within the polygon, and for disturbances outside but in view of the polygon, insert the estimated distance in meters between the polygon edge and the disturbance:

Grazing	Thinning	Wind Farm	
Invasive plants	Quarry	Fire	
_Clearcut Logging	Residence or Farm	_Other Building	
Railroad	Communications Tower	Campground	
Dirt Road	Gravel Road	Asphalt road	
Row Crop	Urban Area	Erosion	
Recreation, if so what kind?	Other (please specify)		

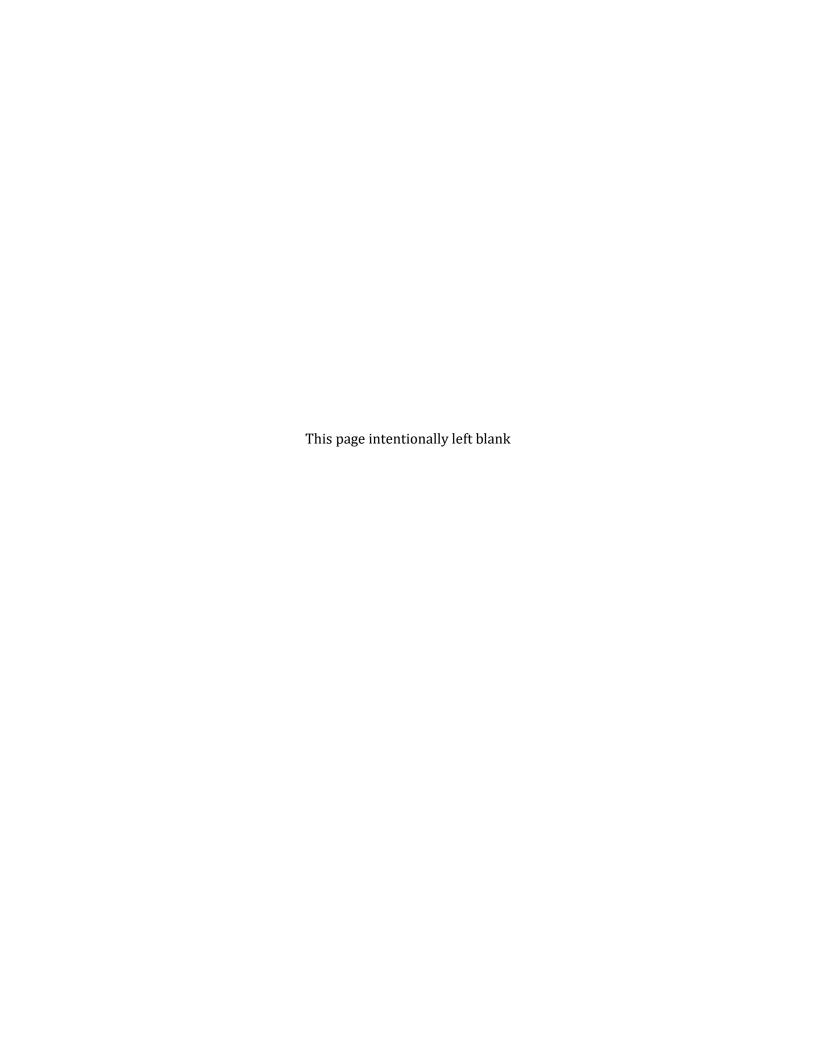
Any sensitive species seen or habitat specifically noted (if yes, please explain)? Yes No

Any special features (for example: caves, mine openings, cliffs, rimrock, rock outcrops, talus slopes, abandoned buildings, large snags, abandoned wood bridges, balds and bluffs, wetland habitats (if yes, please explain)? Yes No

Any additional notes:



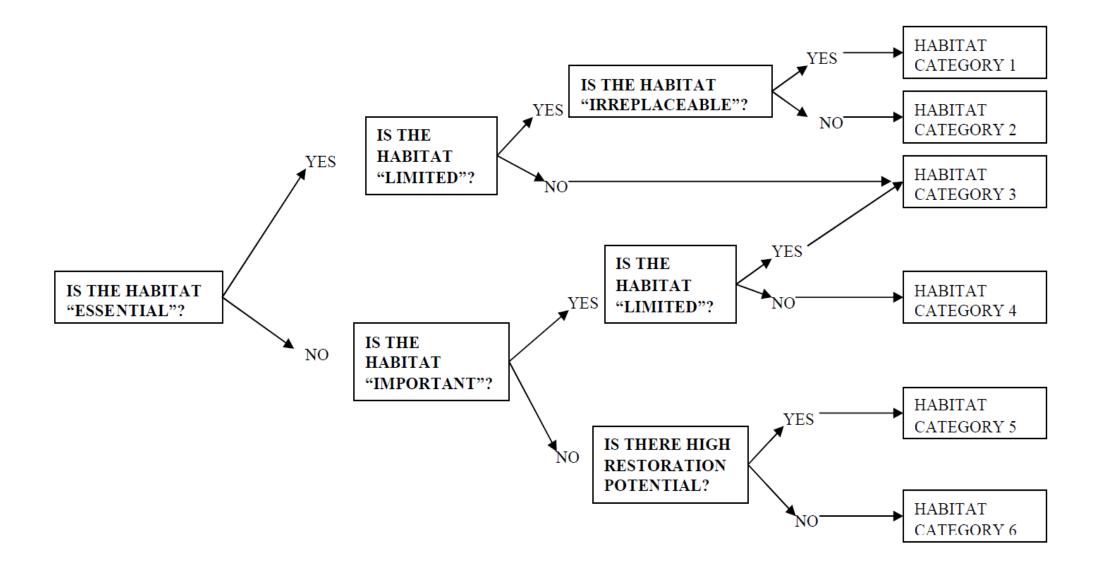
# Attachment 2. West End Solar Project Habitat Types and Subtypes Potentially Occurring within the Project Area



## West End Solar Project Habitat Types and Subtypes Potentially Occurring Within the Project Area

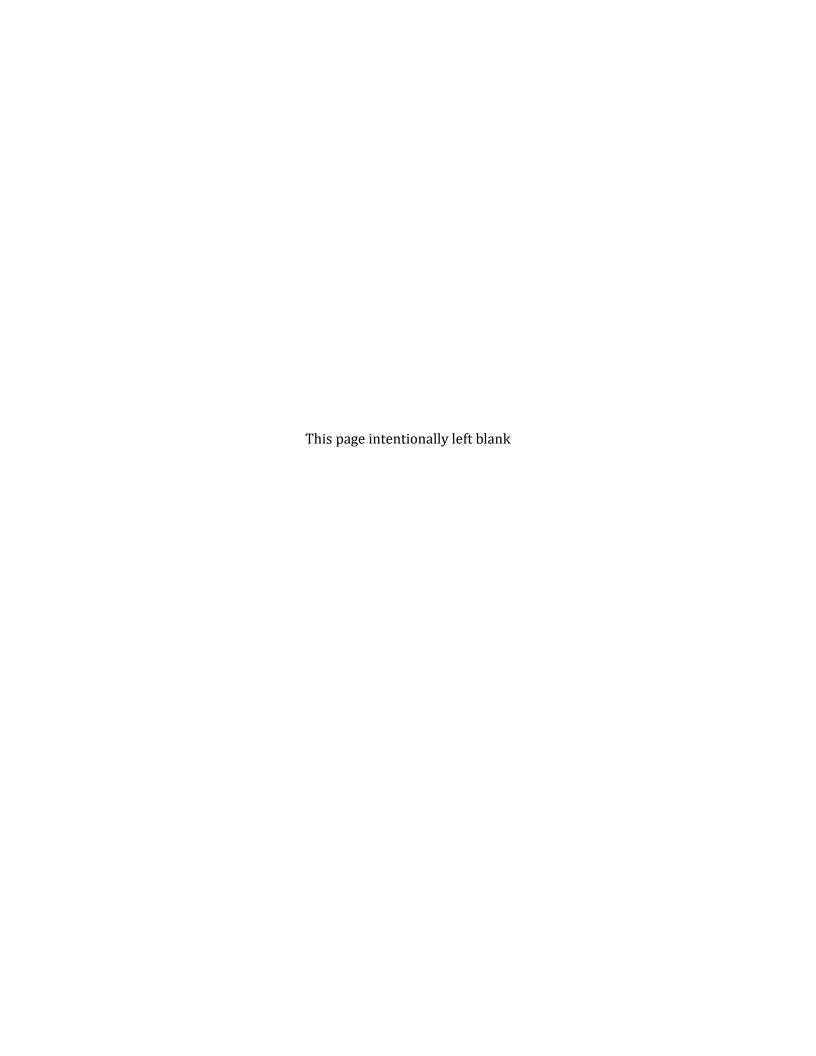
Habitat Type	Habitat Sub-type	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
THE FIRST TWO ROWS ARE O	VERLAYS THAT AUTOMATICALLY	ASSIGN CATEGORIES, BASED ON	SPECIES PRESENCE, TO ONE OR	MORE OF THE HABITAT TYPES D	ESCRIBED BELOW		
Upland Grassland, Shrub- steppe and Shrubland	Eastside Grasslands and Shrub- Steppe Habitats	Active Washington ground squirrel colony with a 785-foot buffer of suitable ground squirrel habitat.	4,921 foot (1.5km) buffer on active WAGS colonies except where there are habitat barriers to dispersal.				
Open natur	Permanent Ponds/Lakes Open water areas, including natural lakes, reservoirs, stock ponds, beaver ponds		Natural lakes or beaver ponds with high-quality habitat.	Most other open water areas with lower-quality habitat (for example, some habitat requisites missing or bullfrogs abundant).	Highly degraded open water area, dominated by non-native vegetation or no vegetation around margins (for example, highly degraded stock pond).		
	Seasonal Ponds Open water areas that contain water part of the year		Seasonal ponds with high quality, mostly native vegetation.	Seasonal ponds with lower- quality habitat that is still dominated by native plant species.	Highly degraded, with a higher proportion of non-native vegetation or no vegetation around margins (for example, a seasonal stock pond).	Habitat almost completely dominated by non-native plant species or otherwise highly degraded.	
Open Water – Lakes, Rivers, Streams	Perennial Streams mapped by USGS having permanent (year-round) flow		Fish-bearing natural stream channels that support native, migratory fish based on StreamNet data or input from ODFW fish biologists; and provides good spawning (gravel beds present, nonembedded) and/or rearing habitat, with native emergent, shrub, or forested riparian margins.	Fish-bearing natural stream channels that do not support native, migratory fish based on StreamNet data or input from ODFW fish biologists; and provide marginal spawning (gravel present in pockets/30% embedded) and/or rearing habitat; or non-fish-bearing natural stream channels which drain into fish-bearing streams based on StreamNet data.	Non-fish-bearing natural stream channels that do not directly drain into fish-bearing streams.		
	Intermittent or Ephemeral Streams mapped by USGS as intermittent		Fish-bearing natural stream channels that support native, migratory fish based on StreamNet data or input from ODFW fish biologists; and provides good spawning (gravel beds present, nonembedded) and/or rearing habitat, with native emergent, shrub, or forested riparian margins.	Fish-bearing natural stream channels that do not support native, migratory fish based on StreamNet data or input from ODFW fish biologists; and provide marginal spawning (gravel present in pockets/30% embedded) and/or rearing habitat; or nonfish-bearing natural stream channels which drain into fish-bearing streams based on StreamNet data.	Non-fish-bearing natural stream channels that do not directly drain into fish-bearing streams.	Non-fish-bearing ephemeral streams or excavated channels with high restoration potential; not important habitat.	

Habitat Type	Habitat Sub-type	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
herbaceous vegetation  Scrub-shrub Wetlands Wetlands with woody was less than 20 feet tall  Forested Wetlands Forests (defined as area minimum of 40% canon > 20 feet tall), dominated	Emergent wetlands with	Any bog or fen.	High quality habitat, dominated by native species	Mixture of native and non- native plant species and low to moderate disturbance		Farmed or previously filled wetlands; highly disturbed, dominated by non-native plant species.	
	Wetlands with woody vegetation	Any bog or fen.	High quality habitat, dominated by native plant species;	Mixture of native and non- native plant species and low to moderate disturbance		Farmed or previously filled wetlands; highly disturbed, dominated by non-native plant species.	
	Forested Wetlands Forests (defined as areas with a minimum of 40% canopy closure > 20 feet tall), dominated by wetland indicator species	Any bog or fen.	Exceptional habitat; well-buffered, with few or no non-native plant species, relatively undisturbed surroundings, or part of a large wetland complex, old-growth, or large sawtimber stage	Mixture of native and non- native plant species at sapling, pole, sawtimber stage			
Riparian Forest and Natural Shrubland Complexes	Eastside Riparian		High quality, diverse riparian areas that are not degraded	Typical mid-seral riparian, provides wildlife habitat	Provides marginal habitat; somewhat degraded.	Highly degraded; dominated by non-native plant species.	
(not irrigated or cultivated/planted)  Upland Grassland, Shrubsteppe and Shrubland  Shrub-steppe	Grassland areas with few shrubs (not irrigated or		Undisturbed habitat dominated by native species (i.e., greater than 75% ground cover is native), or moderately disturbed habitat (i.e., between 50 to 75% ground cover is native) that contains a sagebrush component	Moderately disturbed habitat with a mix of natives and nonnatives (i.e., between 50 to 75% ground cover is native), or highly disturbed habitat (i.e., between 15 to 50% ground cover is native) that contains a sagebrush component	Highly disturbed habitat with a high percentage of non-native plant species (i.e., between 15 to 50% ground cover is native), or very highly disturbed habitats (i.e., less than 15% ground cover is native) that contain a sagebrush component	Very highly disturbed habitats with a high percentage of non- native plant species (i.e., less than 15% ground cover is native), but which do not contain a sagebrush component	
	Shrub-steppe Grassland and shrubland mosaic		High degree of cover; contains native shrubs and native grasses; good structure/forage for wildlife. Understory dominated by native species.  More diversity than Category 3 habitat.	Habitat that is limited within the area (e.g., relatively undisturbed habitat); high degree of cover; moderate cover by weeds, moderate structure/forage for wildlife.	Important wildlife habitat that is moderately to heavily degraded and weedy habitat.	Very low quality dominated by non-native species with high restoration potential.	
Agriculture, Pasture, and Mixed Environs	Planted Grasslands			Croplands planted to grassland with characteristics necessary to potentially provide habitat for sensitive wildlife due to cover and forage quality.	Croplands planted to grassland that lack later seral stage vegetative communities or are of less importance as wildlife habitat due to management or location.	Croplands planted to grassland that lack later seral stage vegetative communities and are highly disturbed or degraded, and have high restoration potential.	
	Orchards, Vineyards, Wheat Fields, Other Row Crops						Active agricultural areas with low potential for restoration.
	Irrigated Pastures and Hay Meadows				Potential habitat for wildlife.		
Cliffs, Caves, and Talus		Sites with bat hibernacula.	Sites with known bat colonies.	Sites without bat colonies.			
Urban and Mixed Environs							All developed areas.



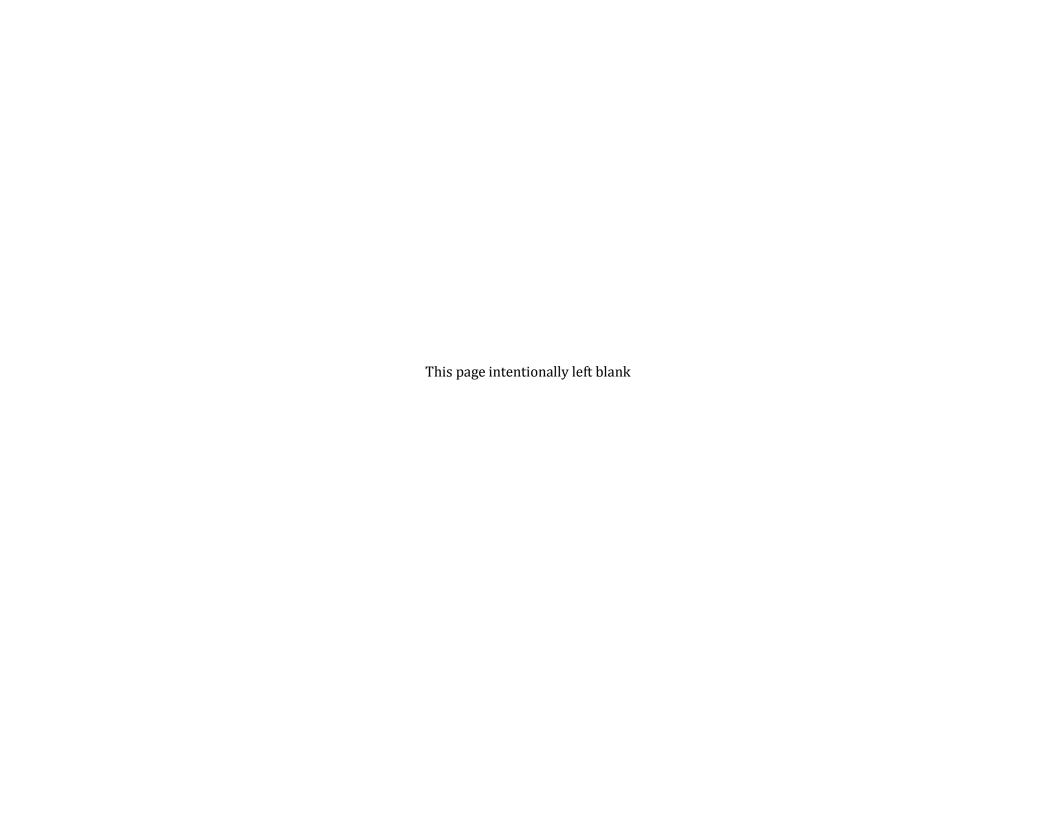


# Attachment 3. Special-Status Wildlife Species Potentially Occurring at West End Solar Project



Common Name	Scientific Name	Federal Status <sup>1</sup>	ODFW Status in Columbia Plateau <sup>2</sup>
Birds	,		'
Bald eagle	Haliaeetus leucocephalus	BGEPA, BCC	-
Brewer's sparrow	Spizella breweri	BCC	S, CSS
Burrowing owl	Athene cunicularia	SOC	SC, CSS
Common nighthawk	Chordeiles minor	-	S, CSS
Ferruginous hawk	Buteo regalis	SOC, BCC	SC, CSS
Golden eagle	Aquila chrysaetos	BGEPA, BCC	-
Grasshopper sparrow	Ammodramus savannarum	-	S, CSS
Loggerhead shrike	Lanius ludovicianus	BCC	S, CSS
Long-billed curlew	Numenius americanus	BCC	SC, CSS
Sage thrasher	Oreoscoptes montanus	BCC	-
Sagebrush sparrow	Artemisiospiza nevadensis	-	SC, CSS
Swainson's hawk	Buteo swainsoni	-	S, CSS
Tricolored blackbird	Agelaius tricolor	SOC, BCC	-
Willow flycatcher	Empidonax traillii	BCC	-
Invertebrates			
Monarch	Denaus plexippus	-	CSS
Mammals	,		
Washington ground squirrel	Urocitellus washingtoni	-	E, CSS
Reptiles	,	1	'
Northern sagebrush lizard	Sceloporus graciosus graciosus	SOC	S, CSS

<sup>2.</sup> ODFW Status in the Columbia Plateau: E = Endangered, SC = Critical Sensitive Species, S = Sensitive Species, CSS = Conservation Strategy Species



# Attachment 4. Select Photographs of Habitats and Wildlife Species Taken during 2019 and 2020 Surveys at West End Solar Project

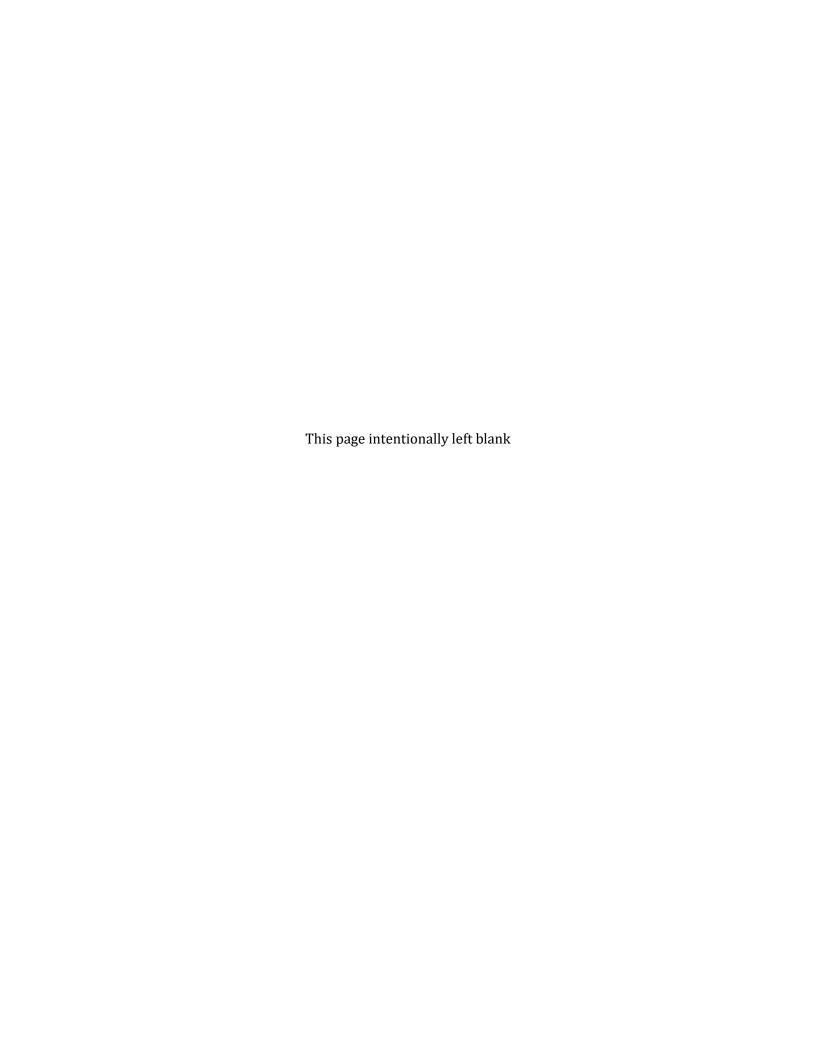




Photo 1. Disturbances adjacent to the Project Area: two-track road, water treatment facility.



Photo 3. Eastside Grassland (Category 5) Habitat.



Photo 2. Eastside Grassland (Category 4) habitat.



Photo 4. Shrub-Steppe (Category 3) habitat.



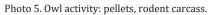
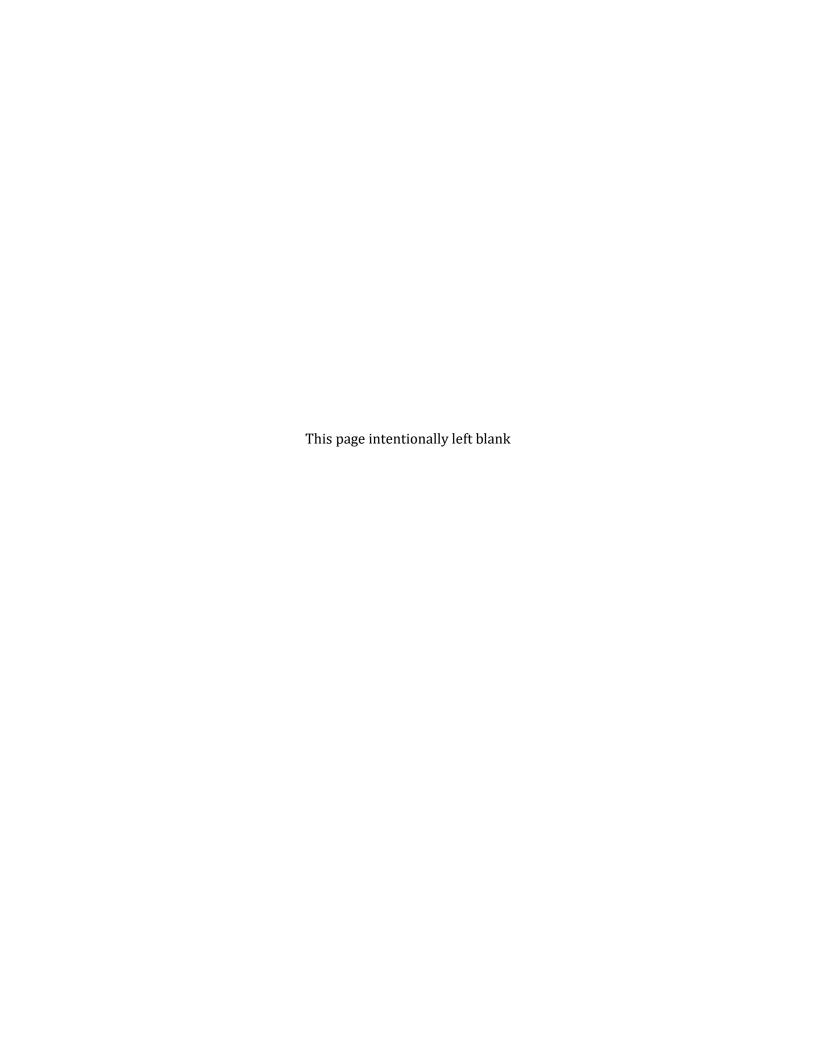




Photo 6. Tarped hay stack.

# Attachment 5. Complete List of Wildlife Species Observed at West End Solar Project



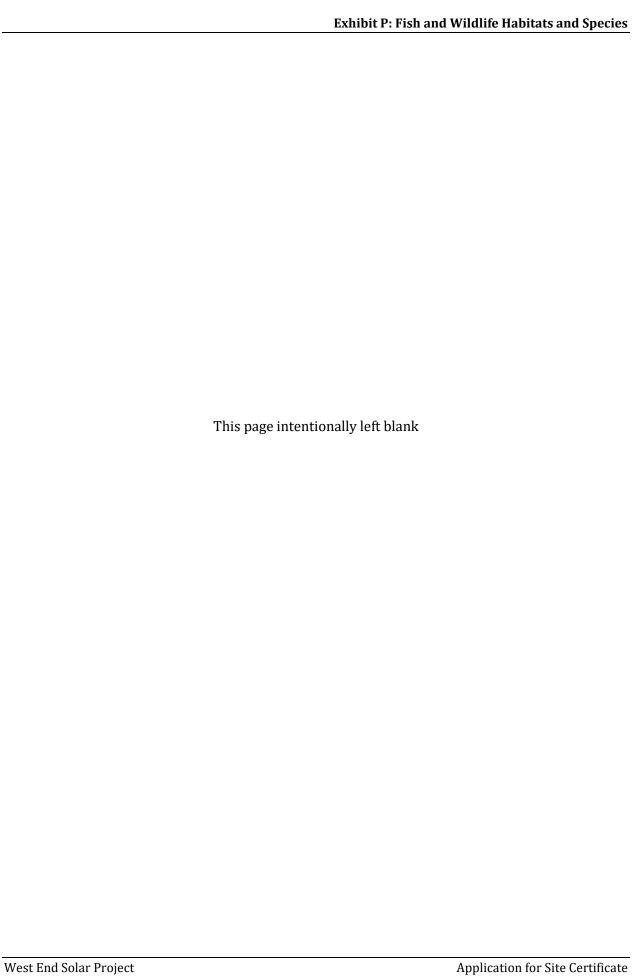
Common Name	Scientific Name
BIRDS	
American crow	Corvus brachyrhynchos
American goldfinch	Spinus tristis
American kestrel	Falco sparverius
American robin	Turdus migratorius
American white pelican	Pelecanus erythrorhynchos
barn swallow	Hirundo rustica
black-billed magpie	Pica hudsonia
brown-headed cowbird	Molothrus ater
Brewer's blackbird	Euphagus cyanocephalus
bufflehead	Bucephala albeola
California quail	Callipepla californica
Canada goose	Branta canadensis
Caspian tern	Hydroprogne caspia
common raven	Corvus corax
Cooper's hawk	Accipiter cooperii
dark-eyed junco	Junco hyemalis
double-crested cormorant	Phalacrocorax auritus
European starling	Sturnus vulgaris
grasshopper sparrow	Ammodramus savannarum
great-blue heron	Ardea herodias
horned lark	Eremophila alpestris
house sparrow	Passer domesticus
killdeer	Charadrius vociferus
long-billed curlew	Numenius americanus
mallard	Anas platyrhynchos
mourning dove	Zenaida macroura
northern flicker	Colaptes auratus
northern harrier	Circus cyaneus
osprey	Pandion haliaetus
red-tailed hawk	Buteo jamaicensis
red-winged blackbird	Agelaius phoeniceus
ring-necked pheasant	Phasianus colchicus
rock pigeon	Columba livia
savannah sparrow	Passerculus sandwichensis
solitary sandpiper	Tringa solitaria

#### $2019\hbox{-}2020\ Wildlife\ and\ Habitat\ survey\ report}$

#### ATTACHMENT 5. COMPLETE LIST OF WILDLIFE SPECIES OBSERVED AT WEST END SOLAR PROJECT

Common Name	Scientific Name
song sparrow	Melospiza melodia
spotted towhee	Pandion haliaetus
Swainson's hawk	Buteo swainsoni
turkey vulture	Cathartes aura
violet-green swallow	Tachycineta thalassina
western kingbird	Tyrannus verticalis
western meadowlark	Sturnella neglecta
white-crowned sparrow	Zonotrichia leucophrys
white-throated sparrow	Zonotrichia albicollis
Mammals	
coyote	Canis latrans

# Attachment P-4. Draft Noxious Weed Control Plan



# West End Solar Project Draft Noxious Weed Control Plan

West End Solar Project April 2022

Prepared for EE West End Solar LLC

Prepared by





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1.2	Target Noxious Weed Species	2
2.0	Noxious Weed Control	3
2.1	Preventative Methods	4
2.2	Treatment Methods	4
2.	2.1 Herbicide Treatment	5
2.	2.2 Manual and Mechanical Treatment	5
3.0	Monitoring	5
4.0	Weed Department Supervisor Review	6
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Figure 1. Site Boundary

## **List of Appendices**

Appendix A. ODA Noxious Weed Policy and Classification System 2020

Appendix B. Umatilla County Noxious Weed Control List

West End Solar Project



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West End Solar Project

# 1.0 Introduction

EE West End Solar LLC (Applicant), a subsidiary of Eurus Energy America Corporation, proposes to construct the West End Solar Project (Project), a solar energy generation facility and related or supporting facilities in Umatilla County, Oregon. The Project will be a photovoltaic solar energy facility with an estimated nominal and average generating capacity of 50 megawatts (MW) of alternating current. The Project may include an energy storage system with a capacity of up to 70 MW. The Project Site Boundary is 324 acres within which all Project facilities will be located.

Oregon Administrative Rule (OAR) 660-033-0130 (38)(h)(D) states, in regard to photovoltaic solar power generation facilities, that:

"Construction or maintenance activities will not result in the unabated introduction or spread of noxious weeds and other undesirable weed species. This provision may be satisfied by the submittal and county approval of a weed control plan prepared by an adequately qualified individual that includes a long-term maintenance agreement. The approved plan shall be attached to the decision as a condition of approval."

This Draft Noxious Weed Control Plan (Plan) was prepared to comply with OAR 660-033-0130 (38)(h)(D) and describes the noxious weed control measures that will be implemented during construction and operation of the Project. Noxious weed control practices for the Project described in this plan were developed in coordination with the Umatilla County Weed Department Supervisor.

# 1.1 Background

The measures described in this Plan are designed to minimize the introduction of new noxious weed species and to control existing populations of target noxious weeds (See Section 1.2). In addition, new noxious weeds detected during post-construction revegetation (as described below) will be considered a result of construction activities and shall be controlled and treated accordingly. For the purposes of this Plan, treatment of target noxious weeds will focus on the entire area within the Project Site Boundary (Figure 1) to minimize noxious weed impacts to surrounding habitat and agricultural areas.

Designated noxious weeds are those invasive weed species that are of elevated economic or environmental concern to the State of Oregon or local jurisdictions and receive priority during management planning and operations. Under Oregon Revised Statutes (ORS) Chapter 569, the Oregon Department of Agriculture (ODA) and Oregon State Weed Board (OSWB) develop and maintain a State Noxious Weed List. OSWB and the ODA classify noxious weeds in Oregon in accordance with the ODA Noxious Weed Classification System (ODA 2020a). Noxious weeds, for the under this system are classified as either "A" or "B" Listed Weeds and may also be listed as "T-Designated Weeds" which are priority target weeds for control, as directed by the OSWB. The ODA also designates select weeds from either the "A" or "B" list as "T" designated weeds. "T" designated

weeds are priority noxious weeds that the ODA has targeted for prevention and control. Per ODA 2020a, the definitions for these classifications are as follows:

"A" Listed Weed: A weed of known economic importance which occurs in the state/county
in small enough infestations to make eradication/containment possible; or is not known to
occur, but its presence in neighboring states/counties makes future occurrence in Oregon
seem imminent.

**Recommended action:** infestations are subject to eradication or intensive control when and where found.

- "B" Designated Weed: A weed of known economic importance, which is regionally abundant, but which may have limited distribution in some counties.
   Recommended action: limited to intensive control at state, county, or regional level as determined on a case-by-case basis. Where implementation of a fully integrated statewide management plan is feasible, biological control shall be the main control approach for species for which biological agents are available.
- **T-Designated Weed:** A designated group of weed species that are selected and will be the focus for prevention and control by the Noxious Weed Control Program. Action against these weeds will receive priority. T-designated noxious weeds are determined by the Oregon State Weed Board and directs ODA to develop and implement a statewide management plan. T-designated noxious weeds are species selected from either the A or B list.

Currently, the ODA lists 46 Class A noxious weed species and 94 Class B noxious weed species (ODA 2020a; Appendix A).

In addition to the State Noxious Weed List, Chapter 97 of the Umatilla County Code includes the Umatilla County Weed Ordinance which defines what is considered a noxious weed, identifies the responsibility of private land owners to control weeds, and outlines the authority of the weed control district and Umatilla County Board of Commissioners to enforce the ordinance. Per ORS 569.350 through 569.520, Umatilla County maintains a Umatilla County Noxious Weed Control List (Umatilla County 2017). This list, adopted by the County in 2017, includes 39 noxious weed species that have been found currently or previously growing in the County (Umatilla County 2017; see Appendix B). Of these 39 species, 19 are classified as "A" designated weeds and 20 are classified as "B" designated weeds.

# 1.2 Target Noxious Weed Species

For the purposes of this Plan, target noxious weeds include County-listed "A" and "B" noxious weed species and ODA-listed "A" and "T" noxious weed species (see Appendices A and B). Based on botanical surveys conducted in 2019 and 2020 (Tetra Tech 2020), six target noxious weed species were observed within the Project boundary (Table 1). Three of these listed noxious weeds, yellow starthistle (*Centaurea solstitialis*), rush skeletonweed (*Chondrilla juncea*), and cereal rye (*Secale cereale*), were highly abundant through the Project area (Tetra Tech 2020). Although these six

species will specifically be targeted for control, if other ODA-listed "A" or "T" noxious weeds or County-listed "A" and "B" noxious weeds are observed in the Project Site Boundary, they will also be treated.

Scientific Name	Common Name	ODA Status	County Status
Bassia scoparia	mock cypress, burning bush, kochia	В	В
Centaurea solstitialis	yellow starthistle	В	В
Chondrilla juncea	rush skeletonweed	B, T	A
Onopordum acanthium	Scotch thistle	В	В
Secale cereale	cereal rye, rye	not listed	В
Tribulus terrestris	puncturevine, goat's head	В	В

Table 1. Target Noxious Weeds Located Within the Project Site Boundary

# 2.0 Noxious Weed Control

The Applicant's primary objective is to prevent the introduction of new noxious weed populations and control existing target noxious weed populations within the Project Site Boundary<sup>1</sup>. Due to the pervasiveness of the noxious weeds as well as other non-native, invasive species present at the site (Tetra Tech 2020), weed control efforts will begin prior to construction. Throughout preconstruction, construction, and operational activities, the Applicant will take appropriate actions to control and prevent the spread of noxious weeds.

Initial short-term weed control will be through herbicide use (as discussed in Section 2.2.1) or mechanical methods (as discussed in Section 2.2.2). Additional spot-treatment of weeds through herbicide use may be needed for long-term weed control. As an additional form of long-term weed control within the solar array footprint, the Applicant anticipates installing and maintaining low-growing vegetation between the solar arrays and installing and maintaining either a gravel base or low-growing vegetation below the solar arrays. Revegetation will be accomplished by the seeding of site-suitable, drought-tolerant, low-stature (< 2 feet) native or non-native, non-invasive perennial grasses and forbs species known to compete well with the noxious weeds and other non-native, invasive species occurring at the site (i.e., desirable vegetation). Seeding will occur between October 1 and February 1 (the preferred seeding dates specified by the Oregon Department of Transportation for construction east of the Cascades)<sup>2</sup>.

It will be important to ensure that herbicide use does not affect establishment of desirable vegetation in revegetation areas that will provide long-term control. Supplemental seeding, as well

West End Solar Project 3

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<sup>&</sup>lt;sup>1</sup> The Project fence line is located within the Site Boundary and therefore would be subject to this Plan.

<sup>&</sup>lt;sup>2</sup> Oregon Department of Transportation. Oregon Standard Specification for Construction 2018. Section 01030.43(b)

as spot herbicide treatments may be needed on a case-by-case basis. Subsequent fertilizer application will be limited in areas treated for target noxious weeds, and the timing of the seeding will need to be coordinated with any herbicide applications.

#### 2.1 Preventative Methods

The Applicant will implement best management practices before and during Project construction and operation to help prevent the invasion and spread of noxious weeds onsite. These may include the implementation of the following measures as appropriate:

- Educating workers of the importance of noxious weed prevention and treatment measures;
- Providing information to construction crews and operational staff regarding target noxious weed species at the operations and maintenance enclosure;
- Inspecting all vehicles and equipment for evidence of noxious weeds before leaving the Project site. If a vehicle or piece of equipment shows visual signs of potential noxious weeds, the vehicle will be cleaned in a designated area onsite, including wheel washing or applying compressed air, before exiting the Project site.
- Equipment and vehicles used to move vegetation and topsoil in noxious weed-infested areas during the clearing phases of the Project will be cleaned of seeds, roots, and rhizomes prior to being allowed to proceed to other areas of the Project site. In most infestation locations, vehicles will be cleaned using compressed air.
- Inspecting for weeds in materials such as gravel or fill for roads, seed mixes used for revegetation, and/or vegetation removed from the site prior to transporting to/from the site;
- Routine, scheduled inspections of the construction area will be conducted on an ongoing basis, beginning with a survey of the site prior to commencement of construction activities and followed by periodic surveys for the duration of the construction process;
- Preventing conditions that favor noxious weed establishment by revegetating disturbed areas as soon as appropriate following construction;
- Inspecting and certifying that the seed mixes are free of weed seed and propagules.
- Monitoring areas of temporary and permanent disturbance for noxious weeds after construction, during the normal course of revegetation maintenance, and implementing control measures appropriately (as described below);
- After construction has concluded, annual monitoring of the site for the presence of noxious weeds for the operating life of the Project. If a noxious weed is detected, it will be addressed (i.e. abated, controlled or eradicated) and the detection area monitored; and
- Including noxious weed prevention and control measures, such as Project inspection and documentation, in operations plans.

#### 2.2 Treatment Methods

Control of noxious weeds will be implemented through manual, mechanical or chemical (i.e., herbicide) control measures. Manual control methods include hand-pulling and using hand tools to remove noxious weeds. Mechanical control includes mowing or disking with machinery. Chemical

application is accomplished through use of herbicides targeted to the individual weed species. The Applicant will be responsible for hiring a qualified contractor to implement the treatment of noxious weeds. The most appropriate control method depends on the noxious weed species being treated, the size of the infestation, and the terrain and habitat needing treatment. Standard treatment methods for noxious weeds can be found in the Pacific Northwest Weed Management Handbook (Peachey 2022), ODA's Oregon Noxious Weed Profiles (ODA 2020b), and Weed Control in Natural Areas in the Western United States (UC Davis 2013). If chemical control is implemented, it will be timed and conducted during suitable climatic conditions to minimize or prevent drift. Initial wed control efforts will begin prior to construction.

#### 2.2.1 Herbicide Treatment

The specific herbicide used and the timing of application will be chosen based on the specific noxious weed being treated, as appropriate herbicides differ between species and types of plants (i.e., dicots versus monocots). Recommended treatment methods, as well as the recommended timing of treatments for the six target noxious weeds identified within the Project Site Boundary, can be found in the Pacific Northwest Weed Management Handbook (Peachey 2022) and Weed Control in Natural Areas in the Western United States (UC Davis 2013). Only herbicides approved by the U.S. Environmental Protection Agency and ODA will be applied and appropriate best management practices will be implemented during application. Herbicides will be applied with a spreader sticker surfactant (e.g., Dynamic Green Concepts, Phase).

#### 2.2.2 Manual and Mechanical Treatment

Manual and mechanical control methods rely on removal of plants, seed heads, and/or cutting roots with a shovel or other hand tools or mechanical equipment that can be used to remove, mow, or disc noxious weed populations. Hand removal of plants is also included under this treatment method. Manual and mechanical methods are useful for smaller, isolated populations of noxious weeds or in areas of sensitive species or habitats, or can be used in combination with chemical control methods. Additionally, hand removal of small infestations can minimize soil disturbance, allowing desirable species to remain and limiting conditions favorable for noxious weeds. Some rhizomatous plants can spread by discing or tillage; therefore, implementation of discing, where applicable, will be species specific.

If such a method is used in areas where revegetation will be implemented, subsequent seeding will be conducted to establish desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds.

# 3.0 Monitoring

A pre-construction monitoring survey will be scheduled before construction to identify noxious weed species within the Project Site Boundary, with a focus on target noxious weed species observed during the on botanical surveys conducted in 2019 and 2020 (Table 1, Tetra Tech 2020).

Weed control measures (manual, mechanical, and/or chemical) will occur prior to commencement of construction activities.

During the construction phases of the Project, construction staff will conduct periodic monitoring of target noxious weeds within the Project Site Boundary. Any signs of new target noxious weed growth, or of re-growth in treated areas, will be addressed promptly with further herbicide, manual, or mechanical treatments or other best management practices.

Following construction, monitoring for target noxious weeds will be conducted annually for the first five years to assess weed growth and to inform noxious weed control measures. Noxious weed monitoring will consist of a site survey, conducted during the growing season, to identify noxious weed species that have established within the Project Site Boundary, as well as inspections of treated areas to assess the success of previous noxious weed treatments.

The initial post-construction monitoring survey will be scheduled slightly before post-construction herbicide application, as applicable, to identify noxious weed species within the Project Site Boundary, with a focus on target noxious weed species observed prior to construction (Table 1), or other populations of target noxious weeds not previously observed in these areas.

The results of the initial monitoring will be summarized in a monitoring report that details all noxious weed species observed, identifies treatment protocols for target noxious weed species, and describes the location of target noxious weed species identified. Subsequent monitoring will assess the success of noxious weed treatments and will document any new target noxious weed infestations observed. These results will be summarized in short memorandums provided to the County and ODOE that describe the treatment success or failure, make recommendations to improve treatment success (if necessary), and note any new target noxious weed species or emergence. If the Applicant contracts with the County Weed Department Supervisor to perform weed control at the Project, then no monitoring report will be provided except for a statement that the County performed the work.

The Applicant will maintain ongoing communication with individual landowners and the County regarding noxious weeds within the Project Site Boundary. Landowners may also contact the Applicant to report the presence of noxious weeds. The Applicant will control the reported noxious weeds on a case-by-case basis and will include a summary of actions taken for that incident in the memorandum.

# 4.0 Weed Department Supervisor Review

Teddy Orr, Weed Department Supervisor, was provided with a copy of this Plan for review in April 2022 and his comments were addressed in this plan.

Teddy Orr, Weed Department Supervisor Umatilla County Road Department 3920 Westgate Street Pendleton, OR 97801-3920 (541) 278-5462; theodore.orr@umatillacounty.gov

# 5.0 Plan Amendment

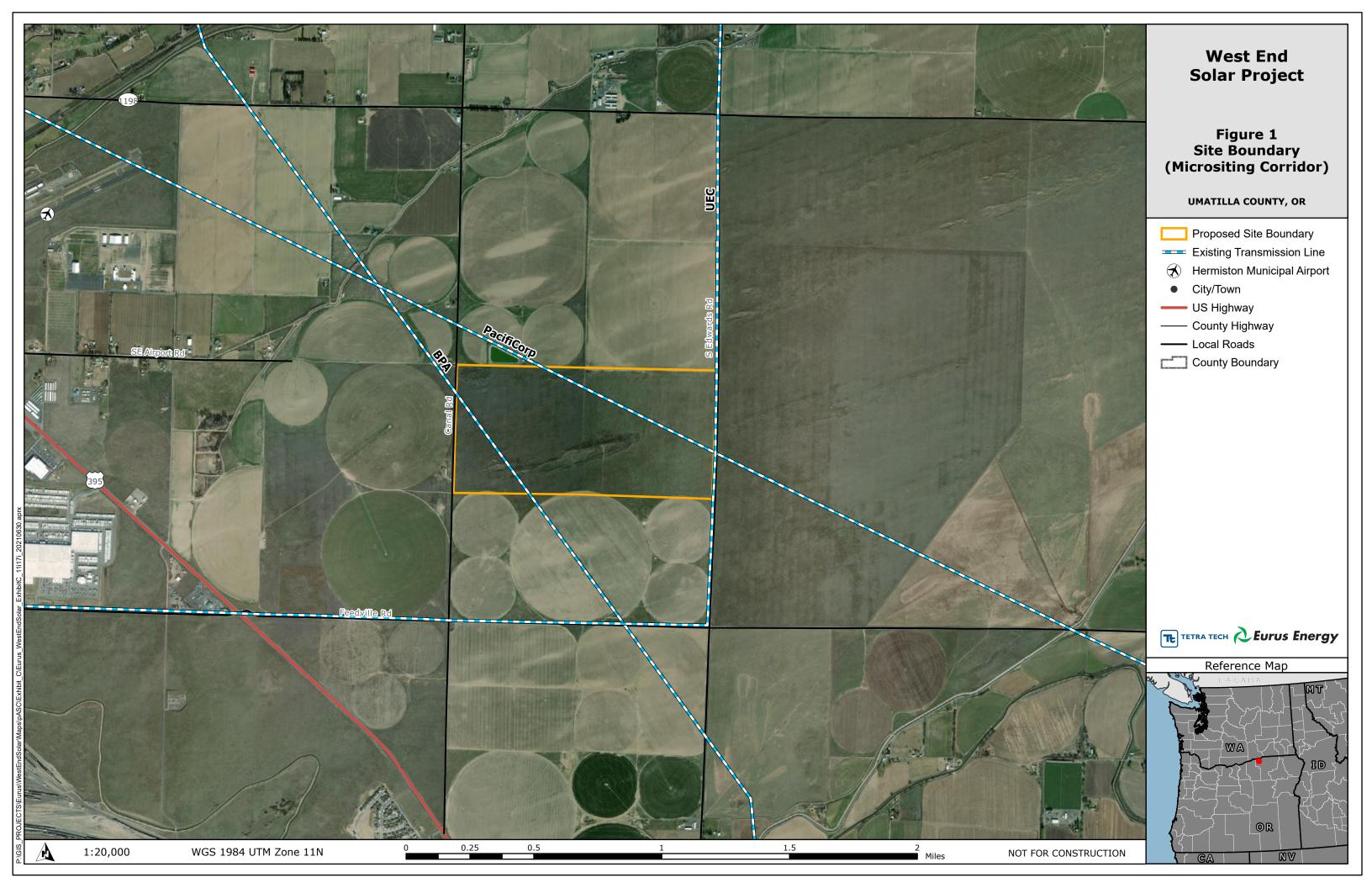
This Plan may be amended from time to time by agreement of the Applicant and the Energy Facility Siting Council (Council). Such amendments may be made without an amendment of the Site Certificate. The Council authorizes ODOE to agree to amendments to this plan. ODOE shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendments of this plan agreed to by ODOE.

# 6.0 References

- ODA (Oregon Department of Agriculture). 2020a. Noxious Weed Policy and Classification System. Noxious Weed Control Program. Salem, OR. Available online at: https://www.oregon.gov/ODA/shared/Documents/Publications/Weeds/NoxiousWeedPolicyClassification.pdf. Accessed March 2022.
- ODA. 2020b. Oregon Noxious Weed Profiles. Available online at:
   https://www.oregon.gov/oda/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOreg
   onWeeds.aspx
- Peachey, E. (Editor). 2022. Pacific Northwest Weed Management Handbook. Corvallis, OR: Oregon State University. Available online at: <a href="https://pnwhandbooks.org/weed">https://pnwhandbooks.org/weed</a> (accessed March 2022).
- Tetra Tech. 2020. 2019-2020 Botanical and Wetland Survey Report, West End Solar Project.

  Prepared for Eurus Energy, Eurus Energy America, LLC. September 2020.
- Umatilla County. 2017. Weed Control Board. Umatilla County Noxious Weed List. Available online at: <a href="https://www.co.umatilla.or.us/road/departments/road/weed/noxious-weed-control-list">https://www.co.umatilla.or.us/road/departments/road/weed/noxious-weed-control-list</a> (accessed March 2022).
- University of California at Davis (UC Davis). 2013. Weed control in natural areas in the Western United States. University of California Weed Research and Information Center. 544 pages.

# 7.0 Figures



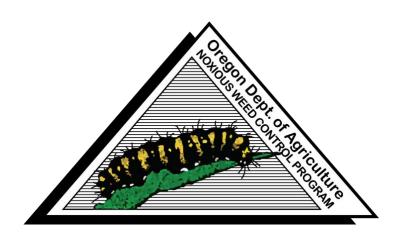


# 8.0 Appendices

Appendix A. ODA Noxious Weed Policy and Classification System 2020

# Oregon Department of Agriculture

# Noxious Weed Policy and Classification System 2020



# Noxious Weed Control Program

**Address:** 635 Capitol Street NE, Salem, Oregon 97301 **Phone:** (503) 986-4621 **Fax:** (503) 986-4786

www.oregon.gov/ODA/programs/Weeds/Pages/AboutWeeds.aspx

#### **Mission Statement**

To protect Oregon's natural resources and agricultural economy from the invasion and proliferation of invasive noxious weeds.

#### **Program Overview**

The Oregon Department of Agriculture (ODA) Noxious Weed Control Program provides statewide leadership for coordination and management of state listed noxious weeds. The state program focuses on noxious weed control efforts by implementing early detection and rapid response projects for new invasive noxious weeds, implementing biological control, implementing statewide inventory and survey, assisting the public and cooperators through technology transfer and noxious weed education, maintaining noxious weed data and maps for priority listed noxious weeds, and assisting land managers and cooperators with integrated weed management projects. The Noxious Weed Control Program also supports the Oregon State Weed Board (OSWB) with administration of the OSWB Grant Program, developing statewide management objectives, developing weed risk assessments, and maintaining the state noxious weed list.

Tim Butler
Program Manager
tbutler@oda.state.or.us
(503) 986-4621

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# **Noxious Weed Control Policy and Classification System**

#### **Definition**

"Noxious weed" means a terrestrial, aquatic or marine plant designated by the Oregon State Weed Board under ORS 569.615 as among those representing the greatest public menace and as a top priority for action by weed control programs.

Noxious weeds have become so thoroughly established and are spreading so rapidly on private, state, county, and federally owned lands, that they have been declared by ORS 569.350 to be a menace to public welfare. Steps leading to eradication, where possible, and intensive control are necessary. It is further recognized that the responsibility for eradication and intensive control rests not only on the private landowner and operator, but also on the county, state, and federal governments.

## **Weed Control Policy**

Therefore, it shall be the policy of ODA to:

- 1. Assess non-native plants through risk assessment processes and make recommendations to the Oregon State Weed Board for potential listing.
- 2. Rate and classify weeds at the state level.
- 3. Prevent the establishment and spread of listed noxious weeds.
- 4. Encourage and implement the control or containment of infestations of listed noxious weed species and, if possible, eradicate them.
- 5. Develop and manage a biological weed control program.
- 6. Increase awareness of potential economic losses and other undesirable effects of existing and newly invading noxious weeds, and to act as a resource center for the dissemination of information.
- 7. Encourage and assist in the organization and operation of noxious weed control programs with government agencies and other weed management entities.
- 8. Develop partnerships with county weed control districts, universities, and other cooperators in the development of control methods.
- 9. Conduct statewide noxious weed surveys and weed control efficacy studies.

# **Weed Classification System**

The purpose of this Classification System is to:

- 1. Act as the ODA's official guideline for prioritizing and implementing noxious weed control projects.
- 2. Assist the ODA in the distribution of available funds through the Oregon State Weed Board to assist county weed programs, cooperative weed management groups, private landowners, and other weed management entities
- 3. Serve as a model for private and public sectors in developing noxious weed classification systems that aid in setting effective noxious weed control strategies.

# Criteria for Determining Economic and Environmental Significance

2

#### **Detrimental Effects**

- 1. A plant species that causes or has the potential to cause severe negative impacts to Oregon's agricultural economy and natural resources.
- 2. A plant species that has the potential to or does endanger native flora and fauna by its encroachment into forest, range, aquatic and conservation areas.
- 3. A plant species that has the potential or does hamper the full utilization and enjoyment of recreational areas.
- 4. A plant species that is poisonous, injurious, or otherwise harmful to humans and/or animals.

#### **Plant Reproduction**

- 1. A plant that reproduces by seed capable of being dispersed over wide areas or that is long-lived, or produced in large numbers.
- 2. A plant species that reproduces and spreads by tubers, creeping roots, stolons, rhizomes, or other natural vegetative means.

#### **Distribution**

- 1. A weed of known economic importance which occurs in Oregon in small enough infestations to make eradication/containment possible; or not known to occur, but its presence in neighboring states makes future occurrence seem imminent.
- 2. A weed of economic or ecological importance and of limited distribution in Oregon.
- 3. A weed that has not infested the full extent of its potential habitat in Oregon.

#### **Difficulty of Control**

A plant species that is not easily controlled with current management practices such as chemical, cultural, biological, and physical methods.

Noxious weeds, for the purpose of this system, shall be listed as either A or B, and may also be designated as T, which are priority targets for control, as directed by the Oregon State Weed Board.

#### • A Listed Weed:

A weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent (Table I).

Recommended action: Infestations are subject to eradication or intensive control when and where found.

#### • B Listed Weed:

A weed of economic importance which is regionally abundant, but which may have limited distribution in some counties (Table II).

Recommended action: Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

#### • T-Designated Weed (T):

A designated group of weed species that are selected and will be the focus for prevention and control by the Noxious Weed Control Program. Action against these weeds will receive priority. T-designated noxious weeds are determined by the Oregon State Weed Board and directs ODA to develop and implement a statewide management plan. T-designated noxious weeds are species selected from either the A or B list.

## **Weed Biological Control**

Oregon implements biological control, or "biocontrol" as part of its integrated pest management approach to managing noxious weeds. This is the practice of using host-specific natural enemies such as insects or pathogens to control noxious weeds. The Oregon Department of Agriculture Noxious Weed Program has adopted the International Code of Best Practices for biological control of weeds. Only safe, effective, and federally-approved natural enemies will be used for biocontrol.

Table I: A Listed Weeds

Common Name	Scientific Name
African rue (T)	Peganum harmala
Camelthorn	Alhagi pseudalhagi
Cape-ivy (T)	Delairea odorata
Coltsfoot	Tussilago farfara
Common frogbit	Hydrocharis morsus-ranae
Cordgrass	
Common	Spartina anglica
Dense-flowered (T)	Spartina densiflora
Saltmeadow (T)	Spartina patens
Smooth (T)	Spartina alterniflora

Delta arrowhead (T)	Sagittaria platyphyla
European water chestnut	Trapa natans
Flowering rush (T)	Butomus umbellatus
Garden yellow loosestrife (T)	Lysimachia vulgaris
Giant hogweed (T)	Heracleum mantegazzianum
Goatgrass	
Barbed (T)	Aegilops triuncialis
Ovate	Aegilops ovata
Goatsrue (T)	Galega officinalis
Hawkweed	
King-devil	Hieracium piloselloides
Mouse-ear (T)	Hieracium pilosella
Orange (T)	Hieracium aurantiacum
Yellow (T)	Hieracium floribundum
Hoary alyssum (T)	Berteroa incana
Hydrilla	Hydrilla verticillata
Japanese dodder	Cuscuta japonica
Kudzu (T)	Pueraria lobata
Matgrass (T)	Nardus stricta
Oblong spurge (T)	Euphorbia oblongata
Paterson's curse (T)	Echium plantagineum
Purple nutsedge	Cyperus rotundus
Ravennagrass (T)	Saccharum ravennae
Silverleaf nightshade	Solanum elaeagnifolium
Squarrose knapweed (T)	Centaurea virgata

(T) T-Designated Weed (See page 4)

# (Continued) Table I: A Listed Weeds

Common Name	Scientific Name
Starthistle	
lberian (T)	Centaurea iberica
Purple (T)	Centaurea calcitrapa
Syrian bean-caper	Zygophyllum fabago
Thistle	
Plumeless (T)	Carduus acanthoides
Smooth distaff	Carthamus baeticus
Taurian (T)	Onopordum tauricum
Turkish (T)	Carduus cinereus
Welted (curly plumeless) (T)	Carduus crispus
Woolly distaff (T)	Carthamus lanatus
Water soldiers	Stratiotes aloides
West Indian spongeplant	Limnobium laevigatum
White bryonia	Bryonia alba
Yellow floating heart (T)	Nymphoides peltata
Yellowtuft (T)	Alyssum murale, A. corsicum

(T) T-Designated Weed (See page 4)

Table II: B Listed Weeds

Common Name	6 Scientific Name
Armenian (Himalayan) blackberry	Rubus armeniacus (R. procerus, R. discolor)
Biddy-biddy	Acaena novae-zelandiae
Broom	
French*	Genista monspessulana
Portuguese (T)	Cytisus striatus
Scotch*	Cytisus scoparius
Spanish	Spartium junceum
Buffalobur	Solanum rostratum
Butterfly bush	Buddleja davidii (B. variabilis)
Common bugloss (T)	Anchusa officinalis
Common crupina	Crupina vulgaris
Common reed	Phragmities australis ssp. australis
Creeping yellow cress	Rorippa sylvestris
Cutleaf teasel	Dipsacus laciniatus
Dodder	
Smoothseed alfalfa	Cuscuta approximata
Five-angled	Cuscuta pentagona
Bigseed	Cuscuta indecora
Dyer's woad	Isatis tinctoria
English hawthorn	Crataegus monogyna
Eurasian watermilfoil	Myriophyllum spicatum
False brome	Brachypodium sylvaticum
Field bindweed*	Convolvulus arvensis
Garlic mustard (T)	Alliaria petiolata
Geranium	
Herb Robert	Geranium robertianum
Shiny leaf	Geranium lucidum
Giant reed (T)	Arundo donax
Gorse* (T)	Ulex europaeus

Halogeton	Halogeton glomeratus
Houndstongue	Cynoglossum officinale
Indigo bush	Amorpha fruticosa

<sup>\*</sup> Biocontrol (See page 4)

<sup>(</sup>T) T-Designated Weed (See page 4)

# (Continued) Table II: B Listed Weeds

Common Name	Scientific Name
lvy	
Atlantic	Hedera hibernica
English	Hedera helix
Johnsongrass	Sorghum halepense
Jointed goatgrass	Aegilops cylindrica
Jubata grass	Cortaderia jubata
Knapweed	
Diffuse*	Centaurea diffusa
Meadow*	Centaurea pratensis
Russian*	Acroptilon repens
Spotted* (T)	Centaurea stoebe (C. maculosa)
Knotweed	
Bohemian	Fallopia x bohemica
Giant	Fallopia sachalinensis (Polygonum)
Himalayan	Polygonum polystachyum
Japanese	Fallopia japonica (Polygonum)
Kochia	Kochia scoparia
Lesser celandine	Ranunculus ficaria
Meadow hawkweed (T)	Pilosella caespitosum (Hieracium)
Mediterranean sage*	Salvia aethiopis
Medusahead rye	Taeniatherum caput-medusae
Old man's beard	Clematis vitalba
Parrot feather	Myriophyllum aquaticum
Perennial peavine	Lathyrus latifolius
Perennial pepperweed (T)	Lepidium latifolium
Pheasant's eye	Adonis aestivalis
Poison hemlock*	Conium maculatum
Policeman's helmet	Impatiens glandulifera
Puncturevine*	Tribulus terrestris
Purple loosestrife*	Lythrum salicaria
Ragweed	Ámbrosia artemisiifolia
Ribbongrass (T)	Phalaris arundinacea var. Picta
Rush skeletonweed* (T)	Chondrilla juncea
Saltcedar* (T)	Tamarix ramosissima
*P:	/T) T Designated \\/acd /See negro 4\

<sup>\*</sup>Biocontrol (See page 4)

# (Continued) Table II: B Listed Weeds

Common Name	Scientific Name
Small broomrape	Orabanche minor
South American waterweed	Egeria densa (Elodea)
Spanish heath	Erica lusitanica
Spikeweed	Hemizonia pungens
Spiny cocklebur	Xanthium spinosum
Spurge laurel	Daphne laureola

<sup>(</sup>T) T-Designated Weed (See page 4)

Spurge	
Leafy* (T)	Euphorbia esula
Myrtle	Euphorbia myrsinites
St. Johnswort*	Hypericum perforatum
Sulfur cinquefoil	Potentilla recta
Swainsonpea	Sphaerophysa salsula
Tansy ragwort* (T)	Senecio jacobaea (Jacobaea vulgaris)
Thistle	
Bull*	Cirsium vulgare
Canada*	Cirsium arvense
Italian	Carduus pycnocephalus
Milk*	Silybum marianum
Musk*	Carduus nutans
Scotch	Onopordum acanthium
Slender-flowered*	Carduus tenuiflorus
Toadflax	
Dalmatian* (T)	Linaria dalmatica
Yellow*	Linaria vulgaris
Tree of heaven	Ailanthus altissima
Velvetleaf	Abutilon theophrasti
Ventenata grass	Ventenata dubia
Primrose Willow	
Large-flower (T)	Ludwigia grandiflora
Water primrose (T)	Ludwigia hexapetala
Floating (T)	Ludwigia peploides
Whitetop	
Hairy	Lepidium pubescens
Lens-podded	Lepidium chalepensis
Whitetop (hoary cress)	Lepidium draba

\*Biocontrol (See page 4) (T) T-Designated Weed (See page 4)

Yellow archangel	Lamiastrum galeobdolon
Yellow flag iris	Iris pseudacorus
Yellow nutsedge	Cyperus esculentus
Yellow starthistle*	Centaurea solstitialis

<sup>\*</sup>Biocontrol (See page 4)

<sup>(</sup>T) T-Designated Weed (See page 4)

4/2020



# Oregon Department of Agriculture

Appendix B. Umatilla County Noxious Weed Control List





Home / Departments / Public Works/Road / Weed Control / Noxious Weed Control List

## Introduction

INTRODUCTION: The Umatilla County Weed Control Board and Board of County Commissioners believes that the prevention and eradication of newly invading weed species yields the greatest return for the resource investment. This is best achieved through an intensive survey and inventory program allowing for early detection and early action. Education and awareness is an integral part of prevention and early detection. Being familiar with what is growing around us is the best way to assure that when a new invader arrives, it will be noticed and dealt with at the most effective stage of development.

#### ORS.569.350-569.520

Per ORS.569.350-569.520 the following lists is 2017 adopted Umatilla County Noxious Weed Control List. The weeds listed here are those on the 2017 Umatilla County list (this list was recommended by the Umatilla County Weed Board and approved by the Umatilla County Board of Commissors) CURRENTLY FOUND GROWING OR KNOWN TO HAVE GROWN PREVIOUSLY in Umatilla Co. They are divided according to control requirements categories "A" and "B"

"A" designated weed-a weed of known economic importance which occurs in the state/county in small enough infestations to make eradication/containment possible; or is not known to occur, but its presence in neighboring states/county make future occurrence in Oregon seem imminent.

"B" Designated weed-a weed of known economic importance which is regionally abundant, but which may have limited distribution in some counties. Where implementation of a fully integrated statewide management plan is feasible, biological control shall be the main control approach for species which biological agents are available; noted by asterisk.

# "A" Designated Weed List

These Class "A" weeds have been found as single plants or in very limited populations in the county. Prevention, early detection, and eradication is high priority. Cost share may be available at the Weed Board discretion

- Camelthorn (Alhagi pseudalhagi)
- Common Bugloss (Anchusa officinalis)
- Common Crupina (Cupina vulgaris)
- Creeping Yellow Cress (Roripa sylvestris)
- · Flowering Rush (Botomus umbellatus)
- Garlic Mustard (Alliaria petiolata)

- Japanese Knotweeds [fleece flower] (Polygonum cuspidatum [Fallopia japonica])
- Leafy Spurge (Euphorbia esula)
- Marijuana (Cannabis sativa)
- Meadow Knapweed (Centaurea jacea XC. Nigra)
- Myrtyle Spurge (Euphorbia myrsinites)
- Purple Loosestrife (Lythrum salicaria)
- Purple Starthistle (Centaurea calcitrapa)
- Rush Skeletonweed (Chondrilla juncea)
- Spike Weed (Hemizonia pungens)
- Spotted Knapweed (Centaurea maculosa)
- Tansy ragwort (Senecio jacobaea)
- Viper's bugloss (Echiuin vulgare)
- Yellow flag iris (Iris pseudacorus)

RECOMMENDED ACTION: Infestations are subject to intensive control when and where found.

# "B" Designated Weed List

RECOMMENDED ACTION: Limited to intensive control at state or county level as determined on a case-by case basis.

- Austrian Peaweed (Sphaerophysa salsula)
- Canada Thistle (Circium arvense)
- Cereal Rye (Secale cereale)
- Dalmation Toadflax (Linaria dalmatica)
- Dodder (Cuscuta pentagona)
- Diffuse Knapweed (Cuscuta pentagona)
- Hoary Cress (Cardaria draba)
- Johnsongrass (Sorghum halepense)
- Jointed Goatgrass (Aegilopscylindrica)
- Kochia (Kochia scoparia)
- Mediterranean Sage (Salvia aethiopis)
- Musk Thistle (Carduus nutans)
- Puncturevine (Tribulus terrestris)
- Poison hemlock (Coium maculatum)
- Quackgrass (Agropyron repens)
- Ragweed (Ambrosia artemisiifolia)
- Russian Knapweed (Acroptilion repens)
- Scotch Thistle (Onopordum acanthium)
- St. Johswort (Hypericum perforatum)
- Yellow Starthistle (Centaurea solstitialis)

Enforcement emphasis groups; these groups of invasive plants have been targeted for additional enforcement throughout the County according to the land types and corresponding agricultural uses associated. Three land uses types have been identified and weed lists developed for each they are:

- Dry Land Annual Cropping Areas: Emphasis Weeds, Canada Thistle,
   Scotch Thistle, Yellow Starthistle, Goatgrass, and Kochia.
- Irrigated Crops and Pastures: Emphasis Weeds, Canada Thistle, Scotch Thistle, Bull Thistle, Musk Thistle, Yellow Starthistle, Diffuse Knapweed.

• Dryland Range/Pasture/Timber: Scotch Thistle, Bull Thistle, Canada Thistle Spotted Knapweed, Diffuse Knapweed, Russian Knapweed.

# Other Links

**ODOT Region 5 ODA** 

Most Wanted Weed

**Road Department** 

# **Contact Information**

Umatilla County Road Department 3920 Westgate Street Pendleton, Or 97801 Info:541-278-5462 The Weed Department is open 6:30 am. to 5 pm. Mon. through Thr.

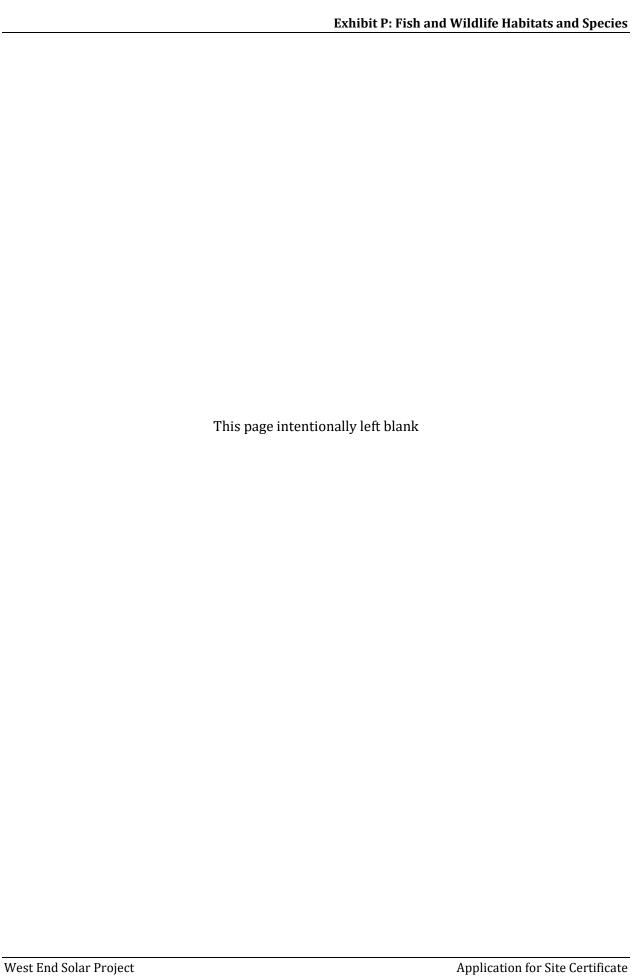
#### **Pendleton Office**

3920 Westgate
Pendleton, OR 97801
Phone: 541-278-5424
Hours: Mon-Thr, 6:30AM-5PM

Hours: Fri, 8AM-5PM

Disclaimer

# Attachment P-5. Draft Habitat Mitigation Plan



# West End Solar Project Draft Habitat Mitigation Plan

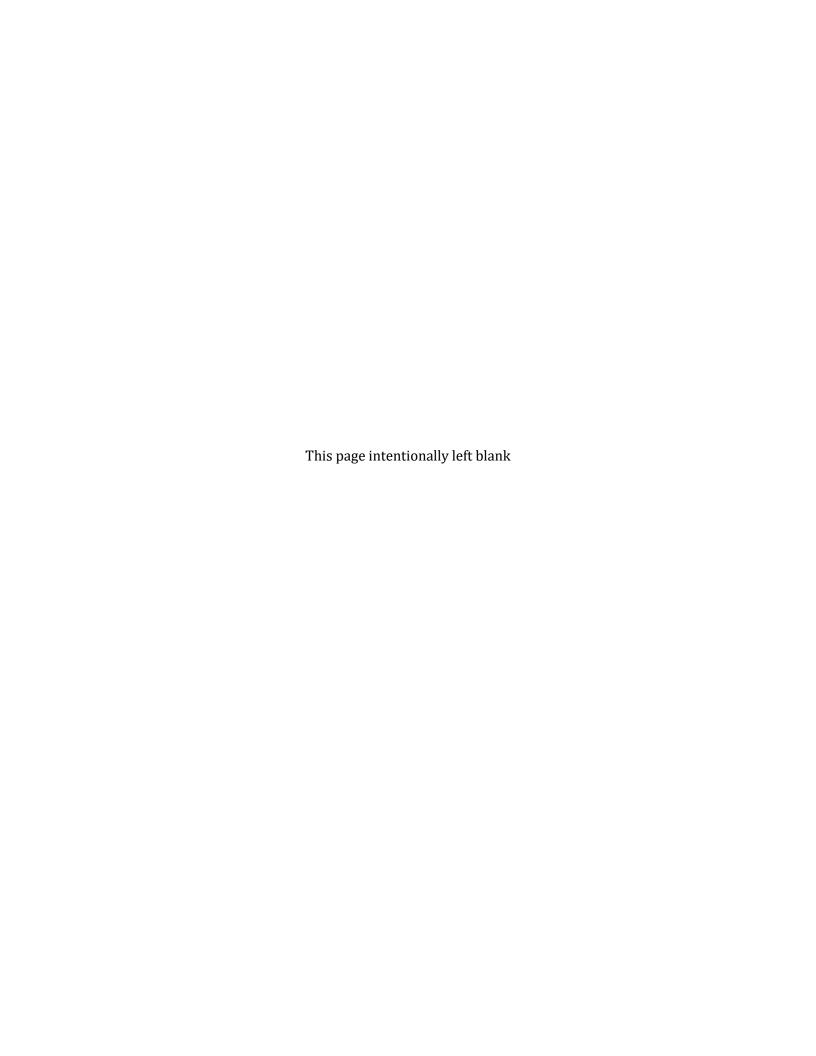
West End Solar Project October 2022

Prepared for EE West End Solar LLC

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# 1.0 Introduction

This draft Habitat Mitigation Plan (HMP) describes how EE West End Solar LLC (Applicant) will mitigate for the unavoidable wildlife habitat impacts of the West End Solar Project (Project). Specifically, this HMP¹ outlines how the Applicant will construct and operate the Project consistent with the Oregon Department of Fish and Wildlife (ODFW) Habitat Mitigation Policy. This plan addresses mitigation for permanent impacts of Project components (permanent impacts); there are no anticipated temporary impacts associated with the Project. The Applicant proposes the acquisition of conservation land or a conservation easement to protect and enhance a compensatory habitat mitigation area (HMA). In addition, the Applicant reserves the right to pursue alternative mitigation pathways if available in the future by pursuing an amendment to this HMP, as provided under Section 8.0 below. The proposed mitigation is an Applicant-developed mitigation site; this plan specifies potential habitat enhancement actions and monitoring procedures to evaluate the success of those actions, as applicable.

# 2.0 Description of the Impacts Addressed by the HMP

Construction of the Project will result in approximately 324 acres of permanent impacts, contained within the Project's perimeter fence line and located within the Project's Site Boundary (Table 1).

Habitat Category	Habitat Type	Habitat Subtype	Permanent Impact (acres)		
3	Upland Grassland, Shrub-steppe and Shrubland	Shrub-steppe	20		
4	Upland Grassland, Shrub-steppe and Shrubland	Eastside grassland	139		
5	Upland Grassland, Shrub-steppe and Shrubland	Eastside grassland	161		
6	Agriculture, Pasture, and Mixed Environs	Orchards, Vineyards, Wheat Fields, Other Row Crops	4		
Total	324				
Note: Totals in this table may not appear to sum correctly due to rounding.					

Table 1. Acres of Impact to Habitat Categories and Types

The areas proposed to be impacted are primarily composed of Eastside Grassland (Category 4 and 5; 93 percent of the Site Boundary), but also include Shrub-steppe (Category 3; 6 percent of the Site Boundary) as well as cultivated cropland (i.e., Orchards, Vineyards, Wheat Fields, Other Row Crops;

<sup>&</sup>lt;sup>1</sup> This HMP will be incorporated by reference in the site certificate for the West End Solar Project and must be understood in that context. It is not a "stand-alone" document.

Category 6; 1 percent of the Site Boundary). The Project will not have any impacts on Category 1 or 2 habitat. No mitigation is required for impacts to Category 6 areas.

# 3.0 Methods for Calculating the Size of the Mitigation Area

The mitigation area for the Project will be determined based on the final design and actual habitat impacts. Before beginning construction, the Applicant will provide the Oregon Department of Energy (ODOE) with a map showing the final design configuration of the Project, and a table showing the estimated acres of permanent impacts by habitat category (Table 1), if changed from the anticipated impacts presented in this HMP.

A mitigation ratio of 1 acre for every 1 acre of Category 3 and 4 habitat permanently impacted will be used to ensure that the mitigation area is large enough to achieve "no net loss" of habitat quantity; site specific enhancement actions will be identified to achieve a "no net loss" of habitat quality. A mitigation ratio of 0.5 acres for every acre of Category 5 habitat impacted and site-specific enhancement actions will be used to ensure a "net benefit" in habitat quantity or quality. No mitigation will be implemented for impacts on Category 6 habitat. Table 2 identifies the anticipated mitigation requirement based on the anticipated habitat permanently impacted.

Impact Type and Habitat Category	Anticipated Permanent Impact (Acres)	Mitigation Acres per Acre Impacted	Estimated Mitigation (Acres)			
3	19.9	1	19.9			
4	139.5	1	139.5			
5	160.7	0.5	80.4			
Total	239.8					
Note: Totals in this table may not appear to sum correctly due to rounding.						

**Table 2. Mitigation Calculation** 

# 4.0 Mitigation

As described above, the Applicant has identified an option for addressing the mitigation obligation. The final mitigation approach will offer enough suitable habitat to achieve the ODFW habitat mitigation goals of no net loss of habitat quantity or quality for impacts to Category 3 and 4 habitat, and a net benefit in habitat quality or quantity for impacts to Category 5 habitat. Prior to operation, the Applicant will acquire the legal right to create, maintain, and protect the HMA for the life of the Project by means of an outright land purchase, easement, or similar conveyance with a covenant restricting use for HMA conservation purposes, and will provide a copy of the documentation to ODOE.

# 4.1 Habitat Mitigation Area

Under this option, the Applicant will establish a conservation easement or purchase conservation lands in the Columbia Plateau ecoregion. The Applicant has preliminarily identified an area that could be used for a mitigation site, where habitat enhancements could benefit raptors and grassland birds and contains sufficient habitat of the appropriate type and quality (i.e., vegetatively Category 3 through 5 grasslands and shrub-steppe) to meet the ODFW Habitat Mitigation Policy goals and habitat mitigation requirements for the Project. The potential HMA is located within the 2100-acre Olex Ranch owned by Karen Kronner and Bob Gritski (i.e., BioDiversity, LLC) and is located in Gilliam County, Oregon. The Applicant has executed an option agreement with the landowners of the potential HMA for a 240-acre conservation easement; a copy of this option agreement has been provided to ODOE.

Habitat within the potential Olex HMA includes planted grassland, native grassland, annual grassland, and shrub-steppe (Table 3, Figure 1), as determined based on aerial imagery and landowner interviews. The quality of the habitat at the potential Olex HMA ranges from Category 2 to 5 based primarily on its vegetative characteristics (e.g., level of disturbance, seral stage, and presence of non-native species). However, the site is also located entirely within ODFW-designated mule deer winter range (ODFW 2013), which is considered Category 2 habitat (Table 3, Figure 1).

**Table 3. Mitigation Area Habitat** 

Location	Habitat Subtype	Habitat Category <sup>1</sup>	Area (Acres)
Northern HMA	Native Perennial Grassland	2	31.4
	Revegetated or Other Planted Grassland	2	12.0
	Annual Grassland	2	9.5
	Shrub-steppe	2	11.7
Northern HMA Subtotal			64.7
Southern HMA	Native Perennial Grassland and Shrub-steppe Mosaic	2	74.1
	Revegetated or Other Planted Grassland	2	89.6
	Shrub-steppe	2	12.3
Southern HMA Subtotal			176.0
Grand Total			240.7
Note: Totals in	this table may not appear to sum correctly due to rounding.	-	

1. All habitat within the HMA is considered Category 2 due to overlap with ODFW-designated Mule Deer Winter Range.

Vegetation within the potential Olex HMA includes rabbitbrush (e.g., *Ericameria nauseosum*), buckwheat species (i.e., *Eriogonum* sp.), and sagebrush (*Artemisia tridentata*) shrubs, as well as areas with diverse native forbs (e.g., lupines [*Lupinus* sp.] and yarrow [*Achillea millefolium*]) and non-native grasses (e.g., cheatgrass [*Bromus tectorum*]). The potential Olex HMA is not currently grazed, although livestock grazing is an allowable use of the property. The Applicant will conduct a

pre-construction Habitat Assessment of the HMA, using methods similar to those used for the Project's pre-construction surveys, to inform the selection of habitat enhancement actions (see Section 4.1.1) and develop appropriate monitoring procedures (see Section 4.1.2) and quantitative success criteria (see Section 5.0) in consultation with ODFW and ODOE.

#### 4.1.1 Habitat Enhancement Actions

Prior to construction, the Applicant will update this HMP with details on habitat enhancement actions (i.e., implementation schedule, protection measures, etc.) to improve the habitat conditions of the mitigation site. The objectives of habitat enhancement are to protect habitat within the HMA from degradation and to improve the habitat quality of the HMA. By achieving these objectives, the Applicant can address the permanent habitat impacts of the Project and meet the ODFW habitat mitigation goals. Based on consultation with ODOE and ODFW, the Applicant shall choose one or more of the following enhancement actions to be included in the conservation easement or performed on the conservation lands, based on the needs of the HMA, to improve habitat conditions and demonstrate a "no net loss" in habitat quantity or quality and "net benefit" in habitat quantity or quality, as applicable:

- 1. Shrub Planting. The Applicant will plant sagebrush or other native shrubs in locations within approximately 20 acres within the HMA where existing native shrubs are in poor condition. The final location and density of shrub planting will be determined prior to construction, taking into consideration the condition of the HMA at the time of construction. The Applicant will complete the initial shrub planting within 1-2 years after the beginning of construction of the Project. Supplementing existing, but disturbed, sagebrush areas with sagebrush seedlings, scattering locally collected sagebrush seeds, or transplanting young plants will assist the restoration of this valuable shrub-steppe component. However, if, at the time of construction and habitat enhancement implementation, the condition of the areas with existing shrubs within the HMA is such that shrub planting is not warranted, the Applicant will plant shrubs over a 20 acre area of the HMA that does not currently support shrubs but is capable of supporting shrubs (e.g., within revegetated or other planted grasslands). The Applicant will obtain shrubs from a qualified nursery, located in the same ecoregion as the mitigation area if possible. The Applicant will identify the optimal time of year to plant (e.g., late winter-early spring) and area to be planted with sagebrush or other native shrubs after consultation with ODFW, subject to final approval by ODOE. If shrubs are planted in the same areas as seeding occurs (see enhancement action #3 below), shrub planting will occur following seeding. The Applicant will mark the planted shrub clusters at the time of planting for later monitoring purposes, and will keep a record of the number of shrubs planted.
- 2. Weed Control. The Applicant will implement a weed control program within the HMA. Under the weed control program, the Applicant will conduct a pre-management weed assessment to identify the type and percentage of non-native species within the HMA. The Applicant will then monitor the HMA to locate weed infestations. The Applicant will continue weed control monitoring, as needed, for the life of the Project. As needed, the

Applicant will use appropriate methods to control weeds. Appropriate weed control methods shall include identification of noxious weeds within the HMA, timing, herbicides, and application mechanism and be based on consultation with the Gilliam County Weed Department. Weed control on the HMA will reduce the spread of noxious weeds within the HMA and on any nearby land. Weed control will promote the growth of desirable native vegetation and planted sagebrush. The Applicant may consider weeds to be successfully controlled when weed clusters have been eradicated or reduced to a non-competing level. Weeds may be controlled with herbicides or hand-pulling. The Applicant will notify the landowners of the specific chemicals to be used on the site and when spraying will occur. To protect locations where young desirable forbs may be growing, spot-spraying may be used instead of total area spraying. Weed control may also include control of annual grasses, followed by shrub-planting (see enhancement action #1 above) and/or seeding (see enhancement action #3 below) in areas with high annual grass cover and low native grass, forb, and shrub diversity (e.g., see example annual grass treatment and seeding areas across approximately 5 acres within the northern HMA in Figure 2).

- 3. Seeding. The Applicant will plant an ODFW-approved seed mix within the HMA in areas that would benefit from increased forb and grass diversity, such as areas of planted grassland and annual grassland. The method for seed application will be determined primarily based on the size of the area to be seeded. The Applicant will seed a minimum of 5 acres. Figure 2 depicts potential areas of seeding across approximately 5 acres within the northern HMA. Controlling weeds and seeding to increase forb and grass diversity in these areas will provide uplift to habitat within the larger HMA by removing weed seed sources and providing a larger contiguous area of higher quality habitat. The final size of the seeded area will depend on the area that would benefit from seeding within the HMA at the time of construction. The Applicant will complete the initial seeding within 1-2 years after the beginning of construction of the Project. The Applicant will record and mark the seeded areas at the time of seeding for later monitoring purposes. The Applicant will develop success criteria for seeding, including the use of paired monitoring and reference sites.
- **4. Fire Control.** The Applicant will implement a fire control plan for wildfire minimization. The Applicant will provide a copy of the fire control plan to ODOE before starting habitat enhancement actions. The Applicant will include in the plan appropriate fire prevention measures, methods to detect fires that may occur, and a protocol for fire response if a fire were to occur when Project personnel were present. If any part of the HMA is damaged by future wildfire, the Applicant will assess the extent of the damage and implement appropriate actions to restore habitat quality in the damaged area.
- 5. **Restricted Grazing.** The Applicant will restrict grazing within the HMA for conservation of vegetation communities and habitat values, and as a permitted use compatible with conservation goals. Grazing will be restricted to December 1 through mid-March, unless other dates are agreed to prior to the initiation of grazing and/or as winter/spring conditions allow (i.e., with the potential to start later and end earlier). Grazing will be restricted to the following number of animals per 100 acres:

- Cattle: four pairings of a mother and calf per month or an equivalent amount of yearlings, assuming a yearling to mother and calf pairing ratio of 0.6.
- Other domestic livestock (may include horses or sheep): number of horses shall be equivalent to the number of cows stated above and the number of sheep shall be at three times the number of cows stated above.

Success criteria will be developed to ensure grazing is not impacting the health and vigor of shrubs, and is not causing irreversible damage to native perennial grasses.

The landowners have indicated these enhancement actions are appropriate and feasible at the potential HMA (e.g., see Figure 2 provided by the landowner). The final enhancements will be approved by ODOE in consultation with ODFW prior to construction and based on the site-specific conditions of the HMA at the time of construction.

# 4.1.2 Monitoring

The Applicant will hire a qualified investigator (botanist, wildlife biologist, or revegetation specialist) to conduct a monitoring program for the HMA. The final HMP will describe monitoring and, at a minimum, include sampling design (i.e., paired monitoring and reference sites, with the number of sites based on diversity of habitat subtypes and enhancement action locations) and vegetation maps with monitoring locations identified; description of data collection methods and monitoring procedures; monitoring schedule; agency consultation schedule and methods for data analysis. The purpose of the monitoring program is to evaluate on an ongoing basis the protection of the habitat quality and the results of enhancement actions, especially during the wildlife breeding seasons.

The investigator will monitor the HMA for the life of the Project beginning in the year following the initial treatment. Monitoring will occur annually during the first 5 years following initial treatment, then will occur every 3 years thereafter, unless increased frequency is recommended by ODOE, in consultation with ODFW. As part of finalizing the HMP, the Applicant will submit a description of the monitoring program for review and comment by ODOE, in consultation with ODFW. ODOE, in consultation with ODFW, may recommend or require one or more of those actions and/or additional monitoring actions for the HMA and the habitat enhancement actions. Based upon specific enhancement actions completed, the final HMP will include procedures or description of data collection methods for the following monitoring actions:

- 1. Assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria;
- 2. Record environmental factors (such as precipitation at the time of surveys and precipitation levels for the year);
- 3. Record any wildfire that occurs within the HMA and any remedial actions taken to restore habitat quality in the damaged area;

- 4. Assess the success of the weed control program and recommend remedial action, if needed; and
- 5. Assess the survival rate and growth of planted species.

# 4.1.3 Reporting

Prior to construction of the Project, the Applicant shall provide a draft report template (e.g., table of contents) for review and comment by ODOE, in consultation with ODFW. Based on the agency-reviewed report template, Applicant will provide ODOE and ODFW a report following each monitoring period (within 60 days) detailing the observations and results, including the details of implemented enhancement actions.

The monitoring reports will document enhancement actions implemented to date and additional remedial actions planned for areas that are not apparently trending toward success, and the anticipated dates of completion of each of these actions. The investigator will report on the timing and extent of any livestock grazing that has occurred within the HMA since the previous monitoring visit.

# 5.0 Success Criteria

The success will be based on improvement of habitat quality based on evidence of indicators such as survival of planted shrubs, natural recruitment of sagebrush, and/or successful weed control. Enhancement actions and habitat quality at the HMA will be compared against the following success criteria to evaluate compliance with the Council's Fish and Wildlife Habitat standard (i.e., consistency with the habitat mitigation goals for Category 3-Category 5 habitat impacts):

- Shrub plantings will generally be considered successful if a 30 percent survival rate is achieved after 4 years.
- Successful weed control (weed monitoring and treatment) within the HMA for the life of the Project. Percentage of noxious weed cover reduced to at or below level found in baseline assessment. Prevention of noxious weed species not present in HMA as of baseline assessment.
- Vegetation density in seeded areas is equal to or greater than that of reference sites.
- Species diversity of desirable vegetation in seeded areas is equal to or greater than that of reference sites.
- Provide a copy of the fire control plant to the rural fire district and ODOE.

The Applicant is obligated to demonstrate that the HMAs meets or that it is demonstrating a trend towards meeting the success criteria for the life of the Project. If the Applicant cannot demonstrate that the HMA is trending toward the habitat quality goals described above within 5 years after the initial enhancement actions, the Applicant will propose remedial action. ODOE may require

supplemental planting or other corrective measures such as additional acreage or new habitat mitigation area throughout the life of the Project depending on ongoing reported trends.

# 6.0 Agency Consultation

# **6.1 Pre-construction Requirements**

Prior to construction of the Project, the Applicant will complete the following steps as part of finalizing the draft HMP:

- 1. HMA Habitat Assessment and Agency Site Visit: The Applicant will conduct a desktop or field survey, as determined appropriate by ODOE, in consultation with ODFW, of the HMA. Applicant will submit a report or memo, including maps and tables, identifying the habitat subtypes and categories present within the HMA. The Applicant will coordinate with ODOE and ODFW to determine whether a site visit is necessary to further evaluate site specific conditions and inform the final enhancement actions.
- 2. Finalize Enhancement Actions: Following review of the HMA Habitat Assessment, Applicant will seek input from ODOE and ODFW on enhancement action opportunities at the HMA. Enhancement actions will, at a minimum, consider those listed in Section 4.1.1 and further defined based on review of the HMA Habitat Assessment or HMA site visit conducted by the Applicant and ODOE and/or ODFW. The final HMP will include a detailed description of final enhancement actions to be implemented and monitored at the HMA.
- 3. Finalize Success Criteria: Following identification of final list of enhancement actions, the Applicant will finalize, for ODOE and ODFW review and approval, success criteria appropriate for tracking the success of enhancement actions to be implemented and monitored at the HMA. The success criteria will be substantially similar as those identified in Section 5 of this HMP, unless other enhancement actions are selected or Applicant seeks approval of an amendment to the HMP.
- 4. Finalize Monitoring Requirements: The Applicant will identify paired monitoring and reference sites within the HMA. Reference sites will be identified, in consultation with ODFW, near the enhancement areas to represent pre-enhancement conditions. One or more reference sites will be identified that closely resembles the pre-enhancement characteristics of the identified enhancement areas. The Applicant will consider land use patterns, soil type, local terrain, and noxious weed densities in selecting reference sites. Once reference sites are selected by the Applicant and approved by ODOE in consultation with ODFW, the reference site will remain in the same location unless approval for use of a differing reference site is obtained by ODOE in consultation with ODFW. Prior to construction of the Project, the Applicant will provide to ODOE and ODFW a map and table presenting preenhancement habitat category and habitat types and location of the reference sites, enhancement areas, and designated monitoring sites within enhancement areas in proximity to the reference sites.

5. **Legal Instrument:** Prior to construction of the Project, the Applicant shall acquire the legal right to create, maintain, and protect the HMA for the life of the Project by means of an outright purchase, conservation easement, or similar conveyance and will provide a copy of the documentation to ODFW and ODOE. The legal instrument shall, at a minimum, adhere to the requirements outlined in Section 7.

# 6.2 Operational Requirements

During HMP implementation, the Applicant will establish a consultation schedule based on enhancements, monitoring, and reporting schedule. At a minimum, the Applicant will consult with the ODOE and ODFW 30 days prior to the initial enhancements and monitoring, and within 30 days of monitoring report submission, to discuss details of report observations and recommendations.

The consultation frequency may be amended, based upon agreement between the Applicant, ODOE, and ODFW, but is intended to provide agencies the opportunity and ability to efficiently assess information; maintain current understanding of the mitigation implementation, effectiveness and issues; and provide relevant recommendations based on timing of any issues identified during HMP implementation.

During HMP implementation, the Applicant will coordinate with the Department and ODFW to offer an annual site visit to the HMA each of the first 5 years following initial treatment and then every 3 years thereafter, unless increased frequency is recommended by ODOE, in consultation with ODFW. The timing of the site visit will be based on optimal seasonal conditions for observation of seeding and shrub planting success and/or weed infestations, and is intended to provide agencies an opportunity to review compliance with the terms of the legal instrument and HMP requirements and to provide any onsite recommendations based on site review.

# 7.0 Legal Instrument

The Applicant will enter into an enforceable and recordable legal instrument, such as a conservation easement or other similar conveyance, that demonstrates reliability and durability of the habitat mitigation for the life of the Project. Prior to construction, the Applicant will provide a draft of the legal instrument to ODOE for review and approval, in consultation with ODFW. ODOE and ODFW review will ensure, at a minimum, that the legal instrument demonstrates or includes the following:

- References and is consistent with the HMP;
- A map and description of all existing structures, impervious surfaces, and access road networks within the HMA;
- Identification of and restrictions on conflicting uses within the HMA, including, but not limited to new roads and associated infrastructure, transmission lines and energy development, land division, and establishment of a feedlot;

- Identification of allowable uses that demonstrate consistency with the HMP wildlife habitat goals; and
- Specifies that ODOE has authority to conduct inspections pursuant to Oregon Administrative Rules 345-026-0050 to ensure that HMAs are being managed consistent with the HMP, with reasonable written notice to the property owner and Applicant.

# 8.0 Amendment of the HMP

This HMP may be amended from time to time by agreement of the Applicant and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes ODOE to agree to amendments to this HMP. ODOE shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this HMP agreed to by ODOE.

# 9.0 References

ODFW (Oregon Department of Fish and Wildlife). 2013. ODFW Winter Range for Eastern Oregon. GIS dataset available online at:

https://nrimp.dfw.state.or.us/DataClearinghouse/default.aspx?p=202&XMLname=885.xml

# **Figures**

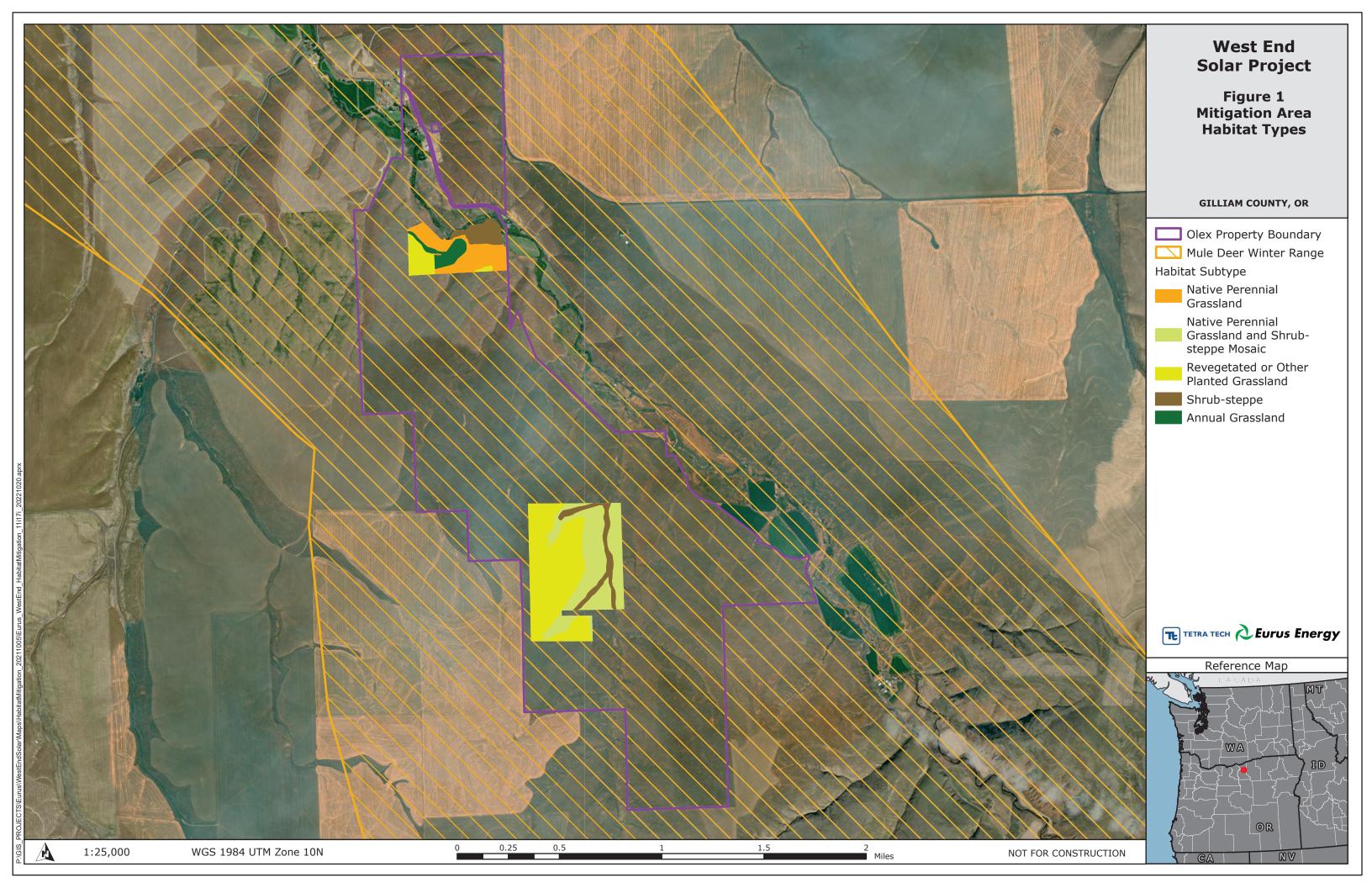
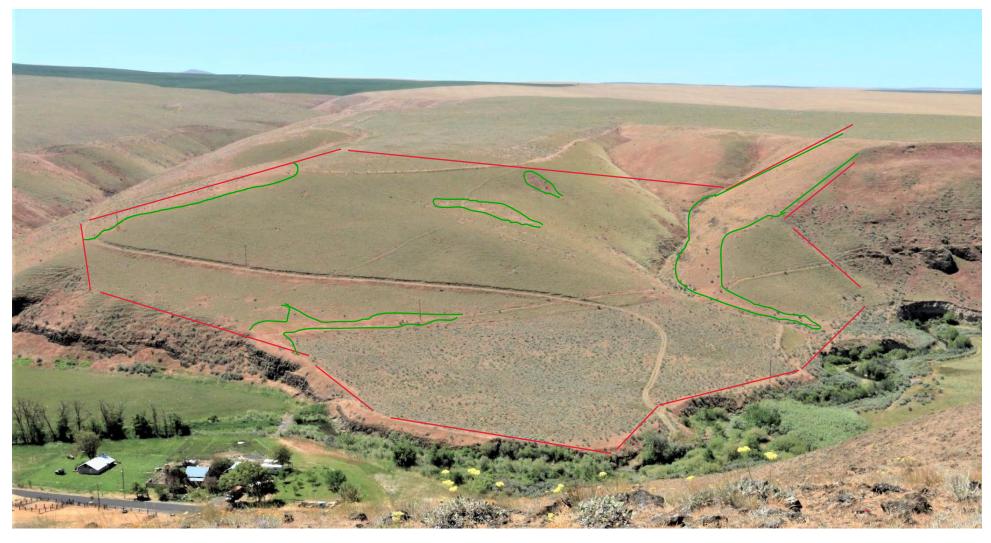


Figure 2. Example Weed Treatment and Seeding Areas, North Habitat Mitigation Area



—West End Solar Project Potential Habitat Mitigation Area, approximate boundary. Looking southwest from Baseline Road

—— Approximate Boundary of Annual Grassland – cheatgrass and annual ryegrass control areas, follow with native perennial grasses as needed