4.5 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	❒	❒	X	❒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	❒	❒	X	❒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❒	X	❒	❒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❒	❒	X	❒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	❒	X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❒	❒	X	❒

4.5.1 Methodology

Methods used to identify and describe biological resources in the Project area included a desktop pre-field investigation to review existing information for the region, reconnaissance-level habitat assessments of the Project area, and general avian surveys within the Project area. The Biological Study Area discussed in Appendix B is defined as the area within 250 feet of the two existing transmission/distribution lines, all areas within 250 feet of a construction area, and within 50 feet of existing, temporary access roads. Details of the surveys are included in the *Biological Resources Technical Report* (provided in Appendix B of the PEA). The Project area (footprint of disturbance), discussed in this section, is defined as the area directly affected by the proposed construction and consists of an assumed 50-foot by 50-foot construction workspace area for each pole, the ROW, staging areas, and new and existing access routes.

4.5.2 Environmental Setting

Regulatory Framework

The National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) and its supporting federal regulations establish certain requirements that must be adhered to for any project "financed, assisted, conducted or approved by a federal agency." In making a decision on the issuance of federal grant monies for elements of a proposed project, the federally designated lead agency pursuant to NEPA is required to "determine whether the proposed action may significantly affect the quality of the human environment."

The Federal Endangered Species Act (ESA; 16 U.S.C. §1531 et seq.) provides provisions for the protection of species listed as threatened or endangered as well as their designated critical habitats. It prohibits the "take" of listed species; however, "incidental take" as the result of otherwise legal project activities may be authorized pursuant to ESA Section 7 (with federal project nexus) or Section 10. Section 10 includes provisions for the development of habitat conservation plans. The U.S. Fish and Wildlife Service (USFWS) advises that proposed and candidate species may be listed at any time and should be considered during project planning. ESA administration is managed by the USFWS for terrestrial species and the National Marine Fisheries Service for species with a significant marine life history component.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in 1964, was enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. The statute requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources. Consultation and coordination with USFWS and California Department of Fish and Wildlife (CDFW) are required to address ways to prevent loss of and damage to fish and wildlife resources and to further develop and improve these resources.

Migratory Bird Treaty Act (16 U.S.C. § 703 - 711) affords protection to 836 species of migratory birds, including waterfowl, shorebirds, seabirds, wading birds, non-migratory upland game birds, raptors and passerines (including crows and ravens), their eggs and occupied nests. The Migratory Bird Treaty Act (MBTA) is administered by USFWS.

Bald and Golden Eagle Protection Act (16 U.S.C. § 668) specifically protects bald and golden eagles from harm or trade of nests, eggs and body parts of these species. The Bald and Golden Eagle Protection Act is administered by USFWS.

Federal Regulation of Waters of the United States, Including Wetlands (Clean Water Act [CWA] Sections 404 and 401, 33 U.S.C. 1251-1376).

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for certification from the state. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval such as a Section 404 permit) must comply with CWA Section 401. Aquatic resources that would qualify as waters of the United States are present in the Project area. Construction and foundation removal activities have the potential to result in a discharge of pollutants into waters of the United States; therefore, a Section 401 Water Quality Certification may be required.

Section 404 Clean Water Act. Waters of the U.S. including wetlands are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into Waters of the U.S. The Sacramento District of the USACE would provide review and permitting services for this Project.

Definition of the Waters of the United States. Waters of the U.S., as applied to the jurisdictional limits of the authority of the USACE under the CWA, is defined in 33 CFR Part 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The 1987 *Corps of Engineers Wetlands Delineation Manual* required that wetlands possess the following characteristics: 1) the prevalent vegetation be comprised of hydrophytic species; 2) soils may be classified as hydric, or soils possess characteristics that are associated with reducing soils conditions; and 3) hydrologic conditions are present in that the area is inundated either permanently or periodically at mean water depths ≤6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Following the Supreme Court's decision in the consolidated cases Rapanos v. United States (2006) and Carabell v. United States (2006) (referred to as "Rapanos"), the jurisdiction of Waters of the U.S. was refined, giving the USACE jurisdiction over specific waters such as traditional navigable waters, tributaries of traditional navigable waters, and wetlands that abut both types of waters (USACE and USEPA 2007).

In June 2015 the Environmental Protection Agency (EPA) and the USACE jointly published a final rule defining the scope of waters and wetlands protected under the CWA in light of the statute, science, the Rapanos decision, and the agencies' experience and technical expertise (EPA and USACE 2015). This final rule clarifies the scope of "waters of the United States" protected under the CWA to include:

- Traditional navigable waters (TNW), interstate waters, and the territorial seas (known water of the U.S.)
- Impoundments of jurisdictional waters
- Covered ***tributaries*** (tributaries to TNWs, interstate waters, territorial seas)
- Covered ***adjacent waters*** (adjacent to TNWs, interstate waters, territorial seas, impoundments, covered tributaries)
- Certain waters w/significant nexus to a TNW, an interstate water, or a territorial sea (e.g., vernal pools, prairie potholes)
- All waters w/significant nexus to a TNW, an interstate water, or a territorial sea that are located either:
    - Within the 100-year floodplain of a TNW, interstate water, or territorial sea
    - Within 4,000 feet of the high tide line or ordinary high water mark of a TNW, interstate water, territorial sea, impoundment, or covered tributary

The final rule defines covered tributaries as:

- A water that contributes flow, either directly or indirectly, or through another water to a known water of the U.S.
- A water that is characterized by the presence of the physical indicators of a bed and bank, and an ordinary high water mark (OHWM).

Covered tributaries may be perennial, intermittent, or ephemeral.

The final rule defines covered adjacent waters as

- Waters bordering, contiguous to, or neighboring to a water of the U.S. as defined above.
- "Neighboring" includes waters that are located within:
    - 100 feet of the OHWM of a jurisdictional water;
    - 100-year *floodplain* of a jurisdictional water AND not more than 1,500 feet from the ordinary high water mark; or
    - 1,500 feet of the high tide line of a known water of the U.S., including the Great Lakes.

The entire water is considered "neighboring" even if only a portion of that water is within the covered area.

The USACE has also produced a series of Regional Supplements to the 1987 *Manual*, providing technical guidance and procedures for identifying and delineating wetlands that may be subject to Section 404 CWA. These Regional Supplements address wetland characteristics that, due to regional differences climate, geology, soils, hydrology, plant and animal communities, and other factors (USACE 2008a), may not meet the characteristics identifying in the 1987 *Manual*. The Project falls within the Western Mountains, Valleys, and Coasts Region.

Executive Order 11990, Protection of Wetlands (42 U.S.C. 4321 91977) directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Federal agencies are required to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for: 1) acquiring, managing, and disposing of federal lands and facilities; 2) providing federally undertaken, financed, or assisted construction and improvements; and 3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Executive Order 11312: Invasive Species

Executive Order 11312 (February 3, 1999) directs all federal agencies to prevent and control the introduction and spread of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their effects on economic, ecological, and human health. The executive order was intended to build upon existing laws, such as NEPA, the Nonindigenous Aquatic Nuisance Prevention and Control Act, the Lacey Act, the Plant Pest Act, the Federal Noxious Weed Act, and ESA. The executive order established a national Invasive Species Council composed of federal agencies and departments, as well as a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The council and advisory committee oversee and facilitate implementation of the executive order, including preparation of the National Invasive Species Management Plan. Federal activities addressing invasive aquatic species are now coordinated through this council and through the National Aquatic Nuisance Species Task Force. The proposed Project may introduce invasive species and therefore federal agencies would be required to consider this Executive Order prior to issuing permits.

Riparian Communities in California

USFWS mitigation policy identifies California's riparian habitats as belonging to resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981). Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, streambank stabilization, and runoff water filtration. Throughout the United States, riparian habitats have declined substantially in extent and quality compared with their

historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, leading federal agencies to adopt policies to arrest further loss.

State

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires California public agencies to identify and mitigate the significant environmental impacts of projects that they are considering for approval. A project normally has a significant environmental impact on biological resources if it substantially affects a rare or endangered species or the habitat of that species, substantially interferes with the movement of resident or migratory fish or wildlife, or substantially diminishes habitat for fish, wildlife, or plants. The State CEQA Guidelines define rare, threatened, and endangered species as those listed under ESA or the California Endangered Species Act (CESA) or any other species that meet the criteria of the resource agencies or local agencies (e.g., species of special concern, as designated by CDFW). The State CEQA Guidelines state that the lead agency preparing an Environmental Impact Report must confer with CDFW concerning project impacts on species listed as endangered or threatened. The effects of a proposed project on these resources are important in determining whether the project has significant environmental impacts under CEQA. CEQA ultimately authorizes the lead agency to require mitigation measures that avoid, minimize, or mitigate potentially significant impacts.

California Endangered Species Act

CESA (California Fish and Game Code Sections 2050–2116) was implemented in 1984 to prohibit the take of species that are listed as endangered or threatened. Section 86 of the California Department of Fish and Game Code defines *take* as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CDFW administers CESA and authorizes incidental take through either California Fish and Game Code Section 2080.1 (consistency determination) or Section 2081 (Incidental Take Permit). State-listed species have the potential to be affected by the Project and would require consultation with CDFW under CESA.

For Swainson's hawks (*Buteo swainsoni*), CDFW has developed survey guidance, conservation strategies, and best practices for avoiding, minimizing, and mitigating project impacts on the species. This guidance is published in CDFW's *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (California Department of Fish and Game [CDFW] 1994).

Fully Protected Species

Sections 3511, 3513, 4700, and 5050 of the California Fish and Game Code pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit the take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock or if a Natural Community Conservation Planning has been adopted. Specifically, Section 3513 prohibits any take or possession of birds designated by the MBTA as migratory non-game birds except as allowed by federal rules and regulations pursuant to the MBTA. Based on observations during the habitat assessment, the Project has the potential to affect golden eagle, a fully protected species.

Protection of Birds and Raptors

Section 3503 of the Fish and Game Code prohibits the killing of birds and/or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and/or the destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal, and failure of nesting attempts (loss of eggs and/or young) as a result of disturbance of nesting pairs caused by nearby human activity. The Project has the potential to adversely affect birds and raptors protected under Sections 3503 and 3503.5 of the Fish and Game Code. For burrowing owls (*Athene*

cunicularia), CDFW has developed survey guidance, conservation strategies, and best practices for avoiding, minimizing, and mitigating project impacts on the species. This guidance has been recently revised in their *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

Lake and Streambed Alteration

CDFW regulates activities that would interfere with the natural flow of or substantially alter the channel, bed, or bank of a lake, river, or stream including disturbance of riparian vegetation under Fish and Game Code Sections 1600–1616. CDFW requires a Lake and Streambed Alteration Agreement (LSAA) permit for these activities. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. CDFW may establish conditions that include avoiding or minimizing vegetation removal, use of standard erosion control measures, limitations on the use of heavy equipment, limitations on work periods to avoid impacts on fisheries and wildlife resources and requirements to restore degraded sites or compensate for permanent habitat losses. Aquatic resources (e.g., streams and ponds) that would be regulated by CDFW are present in the Project area. The Project would not likely involve modifications or improvements to stream crossings or modifications to the bed, bank, or channel of a stream, and would therefore not likely require an LSAA. If modifications are necessary, then an LSAA would be pursued.

California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) of 1977 prohibits importation of rare and endangered plants into California, take of rare and endangered plants, or sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. For the Initial and Full Repower, plants listed as rare under the CNPPA are not protected under CESA, but rather under CEQA. Several rare and endangered plants have potential to occur in the Project area and could be adversely affected by Project activities.

Title 14 California Code of Regulations (Sections 670.2 and 670.5)

Title 14, California Code of Regulations (Sections 670.2 and 670.5) lists animals designated as threatened or endangered in California. Administration of the code is through CDFW.

Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state, and includes Division 7, known as the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Sections 13000–16104 of the California Water Code). Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the State to file a report of discharge (an application for waste discharge requirements [WDRs])" with the appropriate Regional Water Quality Control Board (Regional Water Board). Under this act, each of the nine Regional Water Boards must prepare and periodically update water quality control basin plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Projects that affect wetlands or waters must meet the waste discharge requirements of the Regional Water Board. Pursuant to CWA Section 401, an applicant for a Section 404 permit to conduct any activity that may result in discharge into navigable waters must provide a certification from the Regional Water Board that such discharge will comply with state water quality standards. As part of the wetlands permitting process under Section 404, a project applicant may be required to apply for a water quality certification from the applicable Regional Water Board if necessary.

Section 13050 of the Porter-Cologne Act authorizes the State Water Resources Control Board (State Water Board) and the relevant Regional Water Board to regulate biological pollutants. The California

Water Code generally regulates more substances contained in discharges and defines *discharges to receiving waters* more broadly than the CWA does. Waters of the State could be directly or indirectly affected during activities associated with the Project.

California Wetlands Conservation Policy

The goals of the California Wetlands Conservation Policy, adopted in 1993 (Executive Order W-59-93), are "to ensure no overall net loss, and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California, in a manner that fosters creativity, stewardship, and respect for private property;" to reduce procedural complexity in the administration of state and federal wetlands conservation programs; and to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation.

Siskiyou County General Plan

The Conservation Element of the Siskiyou County General Plan includes general objectives relating to biological resources. These objectives include: 1) "to preserve, protect and manage the Forest Lands as both wild habitat and a productive economic resource"; and 2) "to preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife." The proposed Project would comply with these general objectives by: 1) utilizing the existing right-of-way for the majority of the Project; 2) completely avoiding construction on forest lands and near lakes; and 3) spanning sensitive areas such as wetlands, riparian zones, and streams. Therefore, no conflict with local policies or ordinances would result from approval and implementation of the proposed Project.

There are no Habitat Conservation Plans or other approved governmental habitat plans that involve lands within the proposed Project area. No conflict with habitat conservation plans would result from the proposed Project.

Existing Conditions

The Project is located in Strawberry Valley adjacent to the City of Mt. Shasta, in the southern Cascade Mountains subsection of the Western Range and Irrigated Region (USDA 2006) in Siskiyou County, California. The area is primarily volcanic, supporting active but dormant cones. The Project area is bound on the northeast by Mount Shasta, on the west by Mount Eddy and the Coast Ranges, and to the southwest by Lake Siskiyou. To the north lie Shasta and Scott valleys, just south of the California and Oregon state line. Elevations within the Mount Shasta area range from 14,162 feet on Mount Shasta summit to 3,280 feet at the southern end of Strawberry Valley, near Lake Siskiyou. Project site elevation is approximately 3,400 feet. Vegetation communities in the Project area include non-native grassland, wet montane meadow, dry montane meadow, fen, riparian scrub, and fragmented lower montane coniferous forest.

Wetland delineation surveys conducted in September 2011 and July 2015 mapped areas of extensive palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands crossed by the ROW from pole 21/47 south to between poles 3/48 and 4/48, from the existing substation north to Hatchery Lane, and from pole 20/47 northeast along the distribution ROW to Smith Road. Several smaller waters and wetlands are crossed by the ROW south of the existing substation.

The PEM and PES wetlands from Smith Road south to Hatchery Lane have been degraded by cattle and horse grazing, especially south of pole 20/47. These wetlands are fed by a combination of springs, precipitation, snowmelt, and runoff from the streets of the City of Mt. Shasta to the east (Theiss 1990, Enplan 2008). Water from these wetlands flows south under Hatchery Lane and into a

second wetland, eventually discharging into Cold Creek (Enplan 2008), which emerges from beneath I-5 and flows southwest perpendicular to the transmission line.

South of the existing substation, near poles 23/48 and 24/48, are two seeps that receive water from an agricultural ditch running at the eastern edge of the property. Water reaches the surface as the slope intersects groundwater level, and surface water flows southwest toward the center of the field, outside the PacifiCorp ROW.

Most of these wetlands are dry- and wet-montane meadows except for one section of freshwater marsh that is surrounded by exclusion fencing; Poles 22/47 and 23/47 lie within this freshwater marsh.

The property between Hatchery Lane on the north and Cold Creek on the south consists of natural PEM wetlands characterized as wet and dry montane meadows, as well as natural PEM wetlands characterized as freshwater marsh, and riparian scrub. Cold Creek is an upper perennial riverine wetland and is bordered by riparian scrub habitat. South of Cold Creek is a combination of natural and created wetlands, as well as non-wetland natural areas (characterized by dry montane meadows vegetation communities) that were set aside as wetland mitigation (Theiss 1990) for local development. In 2000, both properties were declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of that mitigation plan.

For additional information, please see the *Jurisdictional Delineation Report* in Appendix D.

The proposed substation site is situated on two residential parcels, which support fragmented lower-montane coniferous forest and ornamental vegetation within a rural residential area. Existing transmission lines currently cross over several vegetation communities, including non-native grassland, wet and dry montane meadow, transmontane freshwater marsh, riparian scrub, and fragmented lower montane coniferous forest. The study area includes numerous residential properties, is adjacent to Interstate 5, and is bisected by two-lane, paved, county-maintained roads. Open space within the Project area along the northern and southern ends of the transmission line has been heavily disturbed by cattle grazing.

The study area and Project site primarily provide forage habitat for common and sensitive species that may migrate through the area. The area supports resident raptors and large mammals, including white-tailed deer, bear, and coyote, and is within the range of several sensitive or protected plant and wildlife species. Suitable habitat exists within the Project area for 20 special-status wildlife species and 17 special-status plant species, although the potential for special-status plant species to occur within the Project area is low due to the current level of disturbance.

Wildlife

The Project area supports wildlife common to the region. Mammals or their sign observed on or near the Project area included red fox (*Vulpes vulpes*), coyote (*Canis latrans*), black bear (*Ursinus americanus*), raccoon (*Procyon lotor*), bobcat (*Felis rufus*), and mule deer (*Odocoileus hemionus*). Wildlife sign observed along the transmission line and potential substation area, including vocalizations, burrows, tracks and scat, was recorded and a general species list was compiled (refer to the *Biological Resources Technical Report* in Appendix B).

Special-Status Species

Special-status species are defined as species that meet one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11 for wildlife, 50 CFR 17.12 for plants, 67 FR 40658 for candidates, and various notices in the Federal Register for proposed species);
- Listed or proposed for listing by the State of California as rare, threatened, or endangered under the California Endangered Species Act (California Administrative Code, Title 14, Section 670.5);
- Included on List 1B, 3, 3, or 4 of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNDDB 2011);
- Included on the California Department of Fish and Game (CDFG) Special Vascular Plants, Bryophytes, and Lichens List (CDFG 2011);
- Designated as Species of Special Concern by the CDFG; identified as "species of concern" or "species of local concern" by the USFWS;
- Protected by the Migratory Bird Treaty Act (MBTA) (U.S.CV. 7030-0712; CH. 128; July 13, 1918; 40 Stat. 755, as amended); and
- Species that otherwise meet the definition of rare, threatened, or endangered, as described in the CEQA Guidelines, Section 15380.

Special-status plant and wildlife species with potential to occur in the Project area are discussed in the following sections.

Special-Status Plants

Based upon database searches and literature review, 66 special-status plant species were identified as potentially occurring within the Project area. Upon further analysis, it was determined that 42 of these species have no potential to occur based variables, including lack of suitable habitat and elevation requirements, and are not discussed further. Plants with potential to occur in the Project area are discussed below; potential to occur based on habitat requirements, soils, elevation, and known populations is shown in Table 4.5-1.

Marbled Wild Ginger (*Asarum marmoratum*)

Marbled wild ginger is a perennial rhizomatous herb that is found in the understory of lower montane coniferous forests. This species blooms from April through August, and is found from elevations of 650 feet through 5,900 feet (200 meters to 1,800 meters). The only recorded occurrence of marbled wild ginger in the Project vicinity is from a specimen collected in 1894 from a location given only as "Sisson", which is now the City of Mt. Shasta (CDFW 2015).

The Project site contains lower montane coniferous forest near the northwest and southeast ends of the transmission line, and fragments of disturbed lower montane coniferous forest occur adjacent to the proposed Lassen Substation site. These fragments lack a native shrub understory; the understory is dominated by non-native grasses and forbs.

Suitable coniferous forest habitat for marbled wild ginger occurs on the project area. Marbled wild ginger has a moderate potential to occur in the Project area.

Wooly balsamroot (*Balsamorhiza lanata*)

Wooly balsamroot is a perennial herb that occurs on rocky, volcanic soils in cismontane woodland, open woods, and occasionally on grassy slopes. This species blooms from April through June, and is found at elevations from 2,600 feet to 6,200 feet (800 meters to 1,895 meters). The CNDDB records multiple occurrences of wooly balsamroot in the Project vicinity, most of which occur between the City of Weed, approximately six miles north of the Project, and Parks Creek. Most of these sites are

grassy slopes and open areas, including several recorded sites along the shoulder of Interstate 5 between Weed and Weed Airport. However, one occurrence is within approximately 1 mile of the Project. The CNDDB records the location as "Pioneer", and maps it as the being in the vicinity of South Mt. Shasta Boulevard and Church Street (CDFW 2015).

Suitable habitat for wooly balsamroot exists near the northern half of the project, outside the wetlands and wet meadows. Wooly balsamroot has a moderate potential to occur in the Project area.

Rattlesnake Fern *(Botrypus virginianus)*

Rattlesnake fern is a perennial herb that occurs in bogs, fens, meadows, seeps, and lower montane coniferous forests. It blooms from June through September and is found at elevations from 3,000 feet to 4,250 feet (728 meters to 1,300 meters). The CNDDB records 11 occurrences of rattlesnake fern within the Project vicinity, all of which are south of Highway 89. The occurrence of rattlesnake fern nearest to the Project is located approximately 3.5 miles south of the Project site (CDFW 2015).

Suitable meadow and montane coniferous forest habitat occurs in the Project area. The potential for rattlesnake fern to occur in the Project area is moderate.

Siskiyou Paintbrush (*Castilleja elata*)

The Siskiyou paintbrush is a hemiparasitic perennial herb that is limited to mesic soils, often serpentine, and occurs in bogs, fens, seeps, and lower montane coniferous forests. This species blooms from May through August, and is found at elevations from 0 feet to 5,740 feet (0 meters to 1,750 meters). In 2011, the CNDDB recorded a population of this species under its synonym *Castilleja miniata* ssp. *elata* approximately 7 miles northeast of the Project, near Panther Meadows; however, in December 2014 this record was no longer in the CNDDB under either name (CDFG 2011, CDFW 2015).

Suitable montane coniferous forest habitat occurs in the Project area. The Siskiyou paintbrush has a low potential to occur in the Project area.

Northern Clarkia (*Clarkia borealis* ssp. *borealis*)

Northern clarkia is an annual herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest; often, this species is found along the sides of cut roads. Northern clarkia blooms from July through September and is found at elevations from 2,300 feet to 4,400 feet (400 meters to 1,340 meters). The CNDDB has one record of this species occurring in the Project vicinity, north of Castle Crags approximately 6.25 miles south of the Project (CDFW 2015).

Suitable montane coniferous forest habitat occurs on the Project site in the form of lower montane coniferous forest. Potential for northern clarkia to occur in the Project area is moderate.

Pallid Bird's-beak *(Cordylanthus tenuis ssp. pallescens)*

Pallid bird's-beak is a hemiparasitic annual herb that occurs in gravelly openings in brush patches or on volcanic alluvium in lower montane coniferous forests. This species blooms from July through September and is found at elevations from 2,280 feet to 5,400 feet (695 meters to 1,645 meters). The CNDDB has 12 records of this species occurring in the Project vicinity, most of which are clustered around Black Butte and the City of Weed. The nearest recorded population of pallid bird's-beak to the Project is located near the intersection of North Old Stage Road and Audubon Road in 1995 (CDFW 2015).

Some suitable montane coniferous forest habitat for pallid bird's-beak occurs in the Project area in the form of lower montane coniferous forest. Potential for pallid bird's-beak to occur in the Project area is low.

Jepson's dodder (*Cuscuta jepsonii*)

Jepson's dodder is an annual parasitic vine. It occurs in North Coast coniferous forest, along streambanks. This species blooms from July through September, and occurs at elevations of 3,937 to 7,545 feet (1,200 to 2,300 meters). The CNPS database does not provide observation locations.

Suitable habitat for Jepson's dodder occurs along the creek and agricultural ditches in the Project area, but due to the lack of specific observation data, it has a low potential to occur in the Project area.

Oregon Fireweed (*Epilobium oregonum*)

Oregon fireweed is a perennial herb that occurs sometimes on serpentine near springs, in bogs, fens, meadows, and upper and lower montane coniferous forest. This species blooms from Jun through September and is found at elevations from 1,650 feet to 8,560 feet (500 to 2,610 meters). The CNDDB has three records of this species occurring in the Project vicinity, two of which are historic. The third record is undated, and was mapped as occurring in the area of Deetz Station near Black Butte approximately 5 miles northwest of the Project (CDFW 2015).

Suitable montane coniferous forest habitat for Oregon fireweed occurs in the Project area. Oregon fireweed has a moderate potential to occur in the Project area.

Pink-margined monkeyflower (*Erythanthe trinitiensis*)

The pink-margined monkeyflower is an annual herb that occurs in cismontane woodland, upper and lower montane coniferous forest, and meadows and seeps. This species often occurs on serpentinite soils, and along roadsides. It blooms from June through July, and sometimes into August, and is found at elevations from 1,312 to 7,497 feet (400 to 2,285 meters).

Suitable montane coniferous forest and meadow habitat for pink-margined monkeyflower occurs in the Project area, although the species hasn't been recently located in the vicinity. Pink-margined monkeyflower has a moderate potential to occur in the Project area.

Coast Fawn Lily *(Erythronium revolutum)*

The coast fawn lily is a bulbiferous herb that occurs in bogs, fens, and along mesic stream banks in broadleaf upland forest and North Coast coniferous forest. This species blooms from May through July and occurs at elevations from 0 feet to 4,400 feet (0 meters to 1,350 meters). The only CNDDB record of this species in the Project vicinity is from a 1910 collection made in the Edgewood area, approximately 11.5 miles northwest of the project (CDFW 2015).

Although suitable coniferous forest habitat for coast fawn lily occurs in the Project area, the species hasn't been recorded in the areas since 1910. Coast fawn lily has a low potential to occur in the Project area.

Scott Mountain Bedstraw *(Galium serpenticum ssp. scotticum)*

Scott Mountain bedstraw is a perennial herb that occurs in lower montane coniferous forest, generally on north-facing slopes, and often on serpentine soils, usually in mixed coniferous forest. This species blooms from May through August and is found at elevations of 3,300 feet to 6,800 feet (1,000 meters to 2,075 meters). The CNDDB has only one record of Scott Mountain bedstraw in the Project

vicinity, located on a slope above the North Fork Sacramento River south of Mount Eddy, approximately 8 miles east of the Project (CDFW 2015).

Suitable coniferous forest habitat for Scott Mountain bedstraw occurs in the Project area in the form of lower montane coniferous forest, although its preferred soil type does not occur within the Project area. Potential for Scott Mountain bedstraw to occur in the Project area is low.

Aleppo Avens (*Geum aleppicum*)

Aleppo avens is a perennial herb found in meadows and seeps, great basin scrub, and lower montane coniferous forest. This species blooms from June through August, and is found at elevations of 1,457 feet to 4,900 feet (450 meters to 1,500 meters). The CNDDB Records three occurrences of this species in the Project vicinity, two of which are historic. The recent record of Aleppo avens is a based on a 2002 observation of this species on private property between Wagon Creek and Cold Creek, approximately 0.75 mile south of the Project (CDFW 2015).

Suitable meadow and montane coniferous forest habitat occurs on the Project site. Potential for Aleppo avens to occur in the Project area is low.

Alkali hymenoxys (*Hymenoxys lemmoni*)

Alkali hymenoxys is a perennial herb that occurs in sub-alkaline soils of meadows and seeps, great basin scrub, and lower montane coniferous forest. It blooms from June through August, and is found at elevations from 790 feet to 3,300 feet (240 meters to 1,000 meters). The CNDDB records four occurrences of alkali hymenoxys in the Project vicinity; all are north or east of the City of Weed and none are more recent than 1972 (CDFW 2015). The population nearest to the Project is also the most recent (1972), and is located west of the community of Edgewood, approximately 13.25 miles northeast of the Project.

Suitable montane coniferous forest and meadow habitat for alkali hymenoxys occurs on the Project site, but it is fragmented and degraded; meadows are heavily grazed by cattle and horses and lower montane coniferous forest is fragmented and lacks a native understory. Potential for alkali hymenoxys to occur in the Project area is low.

Baker's Globe Mallow (*Iliamna bakeri*)

Baker's globe mallow is a perennial herb that occurs on rocky loam or volcanic soils in chaparral, pinyon-juniper woodland, and lower montane coniferous forest. This species blooms from June through September, and occurs at elevations from 3,300 feet to 8,200 feet (1,000 meters to 2,500 meters). The CNDDB has only one record of this species occurring in the Project vicinity; a collection of this species was made in 1940 and the location has been mapped by the CNDDB as the area around McBride Springs Campground, approximately 3.6 miles northeast of the Project (CNDDB 2015).

Suitable coniferous forest habitat occurs in the Project area. Potential for Baker's globe mallow to occur in the Project area is low.

Pickering's Ivesia (*Ivesia pickeringii*)

Pickering's ivesia is a perennial herb that is typically associated with serpentine soils, and occurs on mesic sites such as wet meadows, seeps, and mesic lower montane coniferous forest. This species blooms from June through August, and occurs at elevations from 2,600 feet to 4,950 feet (800 meters to 1,510 meters). The CNDDB has one record of Pickering's ivesia in the Project vicinity occurring approximately 11.5 miles north of the Project, east of the community of Edgewood (CDFW 2015).

Suitable meadow and coniferous forest habitat occurs in the Project area, although its preferred soil type is not present. Potential for Pickering's ivesia to occur in the Project area is low.

Hutchinson's Iewisia *(Lewisia kelloggii ssp. hutchisonii)*

Hutchinson's lewisia is a perennial herb that occurs in openings and ridgetops in upper montane coniferous forest, often on slate or rhyolite tuff. This species blooms from May through August, although sometimes as early as April, at elevations of 2,510 to 7,760 feet (765 to 2,365 meters) (CDFW 2015). The CNPS database does not provide observation locations.

Marginal suitable coniferous forest habitat occurs in the Project area, but due to the lack of specific observation data, potential for Hutchinson's lewisia to occur is low.

Peck's Lomatium (*Lomatium peckianum*)

Peck's lomatium is a perennial herb that occurs in volcanic soils on rocky slopes, flats, and sometimes grassy openings, in lower montane coniferous forest, chaparral, cismontane woodland, and pinyon and juniper woodland. This species blooms from April through May and occurs at elevation from 2,300 feet to 5,900 feet (700 meters to 1,800 meters). The CNDDB has one record of Peck's lomatium occurring in the Project vicinity at Weed Airport, approximately 12.74 miles north of the Project (CDFW 2015).

Suitable coniferous forest habitat occurs in the Project area. Potential for Peck's lomatium to occur in the Project area is low.

Woodnymph *(Moneses uniflora)*

Woodnymph is a perennial rhizomatous herb that occurs in broadleaf upland forest and North Coast coniferous forest. This species blooms from May through August and is found at elevations from 325 feet to 3,600 feet (100 meters to 1,100 meters). The CNDDB has only one, undated, record of this species occurring in the Project vicinity, with the location given only as Sisson, currently City of Mt. Shasta (CDFW 2015).

Suitable coniferous forest habitat for woodnymph occurs in the Project area. Potential for the species to occur in the Project area is low.

Northern Adder's Tongue (*Ophioglossum pusillum*)

Northern adder's tongue is a rhizomatous herb that occurs in marshes, swamps, and mesic valley and foothill grassland. This species blooms in July, and occurs at elevations from 3,300 feet to 6,500 feet (1000 meters to 2,000 meters). The CNDDB has one recorded occurrence of this species in the Project vicinity, dating from 1894 and mapped to Sisson, in the vicinity of an open swamp in what is now the Mt. Shasta Fish Hatchery approximately 0.5 mile northeast of the Project (CDFE 2015).

Suitable marsh and meadow habitat for northern adder's tongue occurs in the Project area; however, the species has not been recorded in the Project vicinity for over 100 years. Potential for the species to occur in the Project area is low.

Thread-leaved Beardtongue (*Penstemon filiformis*)

Thread-leaved beardtongue is a perennial herb that occurs occasionally on serpentine, also in dry stony sites, grassy openings, meadows, cismontane woodland, and lower montane coniferous forest. This species blooms from May through July and occurs at elevations from 1,475 feet to 6,000 feet (450 meters to 1,830 meters). The CNDDB records three occurrences of this species in the Project

vicinity, the nearest of which is mapped along the Everett Memorial Highway approximately 2.5 miles north of the City of Mt. Shasta and 5.5 miles from the Project (CDFW 2015).

Suitable meadow habitat occurs in the Project area. Potential for thread-leaved beardtongue to occur in the Project area is moderate.

Cook's Phacelia (*Phacelia cookei*)

Cook's phacelia is an annual herb that occurs in disturbed areas of loose, ashy, volcanic sand, at the edges of old roads, in great basin scrub, and lower montane coniferous forest. This species blooms from June through July and occurs at elevations from 3,600 feet to 5,600 feet (1,095 meters to 1,700 meters). The CNDDB has one record of this species occurring in the Project vicinity, based on a 1965 collection and mapped generally to the area of Bolam Creek on the north side of Mt. Shasta and approximately 13 miles northeast of the Project (CDFW 2015).

Suitable coniferous forest habitat in the form of lower montane coniferous forest occurs in the Project area, but they are fragmented. Suitable habitat for Cook's phacelia occurs in the Project area. Potential for Cook's phacelia to occur in the Project area is low.

Marsh Skullcap *(Scutellaria galericulata)*

Marsh skullcap is a perennial rhizomatous herb that occurs in marshes, swamps, seeps, meadows, and lower montane coniferous forests. This species blooms from June through September and is found at elevations from 0 feet to 6,900 feet (0 meters to 2,100 meters). The CNDDB has only one record of this species occurring in the Project vicinity, from a collection made in 1894 and mapped generally to Sisson, currently the City of Mt. Shasta (CDFW 2015).

Suitable marsh, meadow, and coniferous forest habitat for marsh skullcap occurs in the Project area, but the species has not been observed locally for 100 years. Potential for marsh skullcap to occur in the Project area is low.

Cylindrical Trichodon (*Trichodon cylindricus*)

Cylindrical trichodon is a moss that occurs on sandy exposed soil and roadside banks in broadleaf upland forest, meadows, seeps, and upper montane coniferous forest. This species is found at elevations from 165 feet to 6,550 feet (50 meters to 2,000 meters). The CNDDB has one record of this species occurring in the Project vicinity, near Castle Lake approximately 6 miles south of the Project (CDFW 2015).

Suitable coniferous forest habitat occurs in the Project area. Potential for cylindrical trichodon to occur in the Project area is moderate.

Siskiyou clover *(Trifolium siskiyouense)*

Siskiyou clover is a perennial herb that occurs in meadows and seeps on mesic soils, and sometime along streambanks. This species is found at elevations of 2,887 to 4,920 feet (880 to 1,500 meters). The CNPS database does not provide observation locations.

Suitable habitat occurs in the Project area, but due to the lack of specific observation data, potential for Siskiyou clover to occur in the Project area is low.

TABLE 4.5-1 SPECIAL-STATUS PLANT SPECIES AND POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Anthoxanthum nitens spp.nitens nodding vanilla grass	Fed: None State: None CNPS: List 2B.3	Perennial rhizomatous herb. Occurs in meadows and seeps, from 1,500 to 1,895 meters in elevation.	April – July	Absent. The project area is below the known elevation range for the species.
Arctostaphylos klamathensis Klamath manzanita	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Evergreen shrub. Occurs in rocky, serpentinite or gabbroic soils in chaparral, lower montane coniferous forest, sub-alpine coniferous forest, upper montane coniferous forest. From 1,570 – 2,250 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
Asarum marmoratum marbled wild ginger	Fed: None State: None CNPS: List 2B.3	Rhizomatous herb. Occurs in lower montane coniferous forest, from 200 – 1,800 meters in elevation.	April – August	Moderate. Some suitable habitat for this species occurs within the Project area.
Balsamorhiza lanata woolly balsamroot	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in rocky volcanic soils in cismontane woodland, from 800 – 1,895 meters in elevation.	April – June	Moderate. Some suitable habitat for this species occurs within the Project area.
Botrychium crenulatum scalloped moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in bogs and fens, meadows and seeps, freshwater marshes and swamps, lower and upper montane coniferous forests. From 1,265 – 3,280 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
Botrychium minganense Mingan moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in mesic habitats such as bogs and fens, streambanks in mixed, lower, and upper montane coniferous forests. 1,455 – 2,180 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Botrychium pinnatum northwestern moonwort	Fed: None State: None CNPS: List 2B.3 FS: Sensitive	Perennial rhizomatous herb. Occurs in lower montane coniferous forest and meadows and seeps and upper montane coniferous forest, from 1,770 – 2,040 meters in elevation.	July – October	Absent. The project area is below the known elevation range for the species.
Botrychium pumicola pumice moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in alpine boulder and rock field communities, and subalpine coniferous forest at 2,750 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Botrypus virginianus rattlesnake fern	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in bogs, fens, lower montane coniferous forest, meadows and seeps, and riparian forests along streams, from 715 – 1,355 meters in elevation.	June – September	High. Suitable habitat for this species occurs within the project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Calochortus greenei Greene's mariposa lily	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial bulbiferous herb. Occurs in cismontane woodland, meadows, seeps, pinyon and Juniper woodland and upper montane coniferous forest, on dry volcanic or gravelly soils, from 1,035 – 1,890 meters in elevation.	June – August	Absent. Some suitable habitat for this species occurs within the Project area, but no dry soils.
Campanula shetleri Castle Crags harebell	Fed: None State: None CNPS: List 1B.1 BLM/FS: Sensitive	Perennial rhizomatous herb. Occurs in rocky soils in lower montane coniferous forest from 1,220 – 1,830 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Campanula wilkinsiana Wilkins harebell	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows, seeps, and upper montane and subalpine coniferous forest, from 1,270 – 2,600 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Cardamine angulata seaside bittercress	Fed: None State: None CNPS: List 2B.1	Perennial herb. Occurs in wet areas and streambanks in lower montane coniferous forests and North Coast coniferous forest, from 65 – 915 meters in elevation.	March – July	Absent. The project area is above the known elevation range for the species.
Carex limosa mud sedge	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in bogs, fens, upper and lower montane coniferous forest, meadows, seeps, marshes, and swamps, from 1,200 – 2,700 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
Castilleja elata Siskiyou paintbrush	Fed: None State: None CNPS: List 2B.2	Perennial hemiparasitic herb. Occurs in bogs, fens, seeps, and lower montane coniferous forest; limited to mesic, often serpentine, soils up to 1,750 meters in elevation.	May – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Chaenactis douglasii var. alpina alpine dusty maidens	Fed: None State: None CNPS: List 2B.3	Perennial herb occurring in alpine boulder and rock field, on granitic soils. From 2,865 – 3,400 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Chaenactis suffrutescens Shasta chaenactis	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Perennial herb. Occurs in upper and lower montane coniferous forest, on sandy serpentinite soils from 750 – 2,800 meters in elevation.	May – September	Absent. The project area does not support the appropriate soils required t for the species.
Clarkia borealis ssp. borealis northern clarkia	Fed: None State: None CNPS: List 1B.1 BLM/FS: Sensitive	Annual herb. Occurs in chaparral, cismontane woodland and lower montane coniferous forest, often found on road cuts, from 400 – 1,390 meters in elevation.	June – September	Moderate. Some suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Claytonia umbellata Great Basin claytonia	Fed: None State: None CNPS: List 2B.3	Perennial herb occurring in subalpine coniferous forest, generally on talus, from 1,705 – 3,500 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
Cordylanthus tenuis ssp. pallescens pallid bird's-beak	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Annual hemiparasitic herb. Occurs in gravelly or volcanic alluvium in lower montane coniferous forest from 695 – 1,645 meters in elevation.	July – September	Low. Marginal suitable habitat for this species occurs within the Project area.
Cuscuta jepsonii Jepson's dodder	Fed: None State: None CNPS: List 1B.2	Annual parasitic vine occurring in volcanic alluvium in coniferous forest, usually along streambanks, from 695 – 1,645 meters in elevation	July – September	Low. Marginal suitable habitat for this species occurs within the Project area.
Draba aureola golden alpine draba	Fed: None State: None CNPS: List 1B.3	Perennial herb. Occurs in alpine boulder and rock field, and subalpine coniferous forest, on serpentine or volcanic outcrops. From 2,000 – 3,355 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
Draba carnosula Mt. Eddy draba	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial herb. Subalpine coniferous forest, upper montane coniferous forest, on rocky or serpentinite soils. From 1,935 – 3,000 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
Epilobium oregonum Oregon fireweed	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial herb. Occurs in bogs and fens, meadows and seeps, and upper and lower montane coniferous forest, on mesic soils. From 500 – 2,240 meters in elevation.	June – September	Moderate. Suitable habitat for this species occurs within the Project area.
Epilobium siskiyouense Siskiyou fireweed	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Perennial herb occurring in alpine boulder and rock field, subalpine and upper montane coniferous forest on rocky, on rocky or serpentinite soils. From 1,700 – 2,500 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Erigeron bloomeri var. nudatus Waldo daisy	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in lower and upper montane coniferous forest, on serpentinite soils, from 600 – 2,300 meters in elevation.	June – July	Absent. The project area does not support the appropriate soils required t for the species.
Erigeron nivalis Snow fleabane daisy	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in volcanic rock outcrops in cracks and crevices, alpine boulder and rock fields, meadows and seeps, and subalpine coniferous forest from 1,735 – 2,900 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Eriogonum alpinum trinity buckwheat	Fed: None State: **Endangered** CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in subalpine coniferous forest, upper montane coniferous forest, alpine boulder and rock fields; rocky soils and scree slopes, slopes in open and windswept areas on serpentine substrate. From 2,185 – 2,900 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
Eriogonum pyrolifolium var. pyrolifolium pyrola-leaved buckwheat	Fed: None State: None CNPS: List 2B.3	Perennial herb. Alpine boulder and rock fields, sandy or gravelly sites, sometimes on pumice. From 1,675 – 3,200 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Erythranthe trinitiensis pink-margined monkeyflower	Fed: None State: None CNPS: List 1B.3	Annual herb occurring in cismontane woodland, upper and lower montane coniferous forest, and meadows and seeps, often on serpentinite and along roadsides, from 400 to 2,285 meters in elevation.	June – July	Moderate. Some suitable habitat for this species occurs within the Project area.
Erythronium klamathense Klamath fawn lily	Fed: None State: None CNPS: List 2B.2	Perennial bulbiferous herb. Occurs in meadows, seeps and upper montane coniferous forest, from 1,200 to 1,850 meters in elevation.	April – July	Absent. The project area is below the known elevation range for the species.
Erythronium revolutum coast fawn lily	Fed: None State: None CNPS: List 2B.2	Perennial bulbiferous s herb. Occurs in bogs, fens, and along mesic stream banks in broadleaf upland forest and north coast coniferous forest, up to 1,600 meters in elevation.	March – July	Low. Marginal suitable habitat for this species occurs within the Project area.
Eurybia merita sub-alpine aster	Fed: None State: None CNPS: List 2B.3 BLM: Sensitive	Perennial herb. Occurs in upper montane coniferous forest in the USGS Mt. Eddy Quadrangle. Easily confused with Eurybia radulina. Elevation 1,300 – 2,000 meters. in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
Galium serpenticum ssp. scotticum Scott Mountain bedstraw	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in lower montane coniferous forest from 1,000 to 2,075 meters in elevation.	May – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Geum aleppicum Aleppo avens	Fed: None State: None CNPS: List 2B.2	Perennial herb. Great basin scrub, lower montane coniferous forest and meadows and seeps from 450 – 1,500 meters in elevation.	June – August	High. Suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Howellanthus dalesianus Scott Mountain howellanthus	Fed: None State: None CNPS: List 4.3	Perennial herb. Occurs in upper and lower montane coniferous forest, meadows, subalpine coniferous forest, dry meadows, or openings in coniferous forest communities; on serpentine soils. From 1,015 to 2,105 meters in elevation.	May – July	Absent. The project area does not support the appropriate soils required t for the species.
Hulsea nana little hulsea	Fed: None State: None CNPS: List 2B.3	Perennial herb. Alpine boulder and rock fields and sub-alpine coniferous forest with rocky, gravelly volcanic soils. From 1,720 – 3,355 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
Hymenoxys lemmoni alkali hymenoxys	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in great basin scrub, lower montane coniferous forest and sub-alkaline meadows and seeps from 240 – 3,390 meters in elevation.	June – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Iliamna bakeri Baker's globe mallow	Fed: None State: None CNPS: List 4.2	Perennial herb. Occurs in chaparral, Great Basin scrub, lower montane coniferous forest, and pinyon-juniper woodland; on rocky loam or volcanic soils, and often in burned areas. From 1,000 – 2,500 meters in elevation.	June – September	Low. Marginal suitable habitat for this species occurs within the Project area.
Ivesia longibracteata Castle Crags ivesia	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Perennial herb. Occurs on granitic, rocky soils in lower montane coniferous forest from 1,200 – 1,400 meters in elevation. Known only from Castle Crags.	June	Absent. The project area is below the known elevation range for the species.
Ivesia pickeringii Pickering's ivesia	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial herb. Occurs in mesic lower montane coniferous forest, meadows and seeps. Typically associated with serpentine soils. Elevation ranges from 800 – 1,510 meters in elevation	June – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Lewisia kelloggii ssp. hutchisonii Hutchinson's lewisia	Fed: None State: None CNPS: List 3.2	Perennial herb occurring in openings and ridgetops in upper montane coniferous forest, meadows, and seeps, in mesic soils, often on slate or rhyolite tuff. From 765 – 2,365 meters in elevation.	May – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Lewisia kelloggii ssp. kelloggii Kellogg's lewisia	Fed: None State: None CNPS: List 3.2	Perennial herb occurring in openings and ridgetops in upper montane coniferous forest, often on slate and sometimes rhyolite tuff. From 1,465 – 2,365 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
Lomatium peckianum Peck's lomatium	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in lower montane coniferous forest, chaparral, cismontane woodland and pinyon and Juniper woodland with volcanic soils, from 700 – 1,800 meters in elevation.	April – May	Low. Marginal suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Meesia triquetra three-ranked hump moss	Fed: None State: None CNPS: List 4.2	Moss. Occurs in bogs and fens, meadows and seeps, upper montane coniferous forest and sub-alpine coniferous forest on mesic soils, from 1,300 – 2,953 meters in elevation.	July	Absent. The project area is below the known elevation range for the species.
Meesia ulignosa broad-nerved hump moss	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Moss. Occurs in bogs, fens, seeps, and on damp soils in meadows, upper montane coniferous forest and sub-alpine coniferous forest on damp soil, from 1,210 – 2,804 meters in elevation.	October	Absent. The project area is below the known elevation range for the species.
Moneses uniflora woodnymph	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in broadleafed upland forests and North Coast coniferous forests, from 100 – 1,100 meters in elevation.	May – August	Low. Marginal suitable habitat for this species occurs within the Project area.
Ophioglossum pusillum northern adder's tongue	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows and seeps, and marsh and swamp margins, from 1,000 – 2,000 meters in elevation.	July	Low. Suitable habitat for this species occurs within the Project area, but not observed for more than 100 years.
Orthocarpus pachystachyus Shasta orthocarpus	Fed: None State: None CNPS: List 1B.1 BLM: Sensitive	Annual herb. Occurs in great basin scrub, meadows, seeps, and valley and foothill grasslands, at approximately 850 meters in elevation.	May	Absent. The project area is above the known elevation range for the species.
Parnassia cirrata var. intermedia Cascades grass-of-Parnassus	Fed: None State: None CNPS: List 1B.3 FS: Sensitive	Perennial herb. Occurs in bogs, fens, meadows and seeps with rocky, serpentine soils, from 780 – 1,980 meters in elevation.	August – September	Absent. The project area does not support the appropriate soils required t for the species.
Penstemon filiformis thread-leaved beardtongue	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Perennial herb. Occurs in rocky cismontane woodland and lower montane coniferous forest, from 450 – 1,875 meters in elevation	May – August	Moderate. Some suitable habitat for this species occurs within the Project area.
Phacelia cookei Cook's phacelia	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Annual herb. Occurs in great basin scrub and lower montane coniferous forest on sandy, volcanic soils, from 1,095 – 1,700 meters in elevation.	June – July	Low. Marginal suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Phacelia leonis Siskiyou phacelia	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Annual herb. Occurs in meadows, seeps and openings in upper montane coniferous forest, often on serpentinite soils, from 1,200 to 2,000 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
Pinguicula macroceras horned butterwort	Fed: None State: None CNPS: List 2B.2	Perennial carnivorous herb. Occurs in bogs and fens, on serpentinite soils, from 40 – 1,920 meters in elevation.	April – June	Absent. The project area does not support the appropriate soils required t for the species.
Polemonium eddyense Mt. Eddy sky pilot	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in alpine boulder and rock fields, subalpine coniferous forest, gravelly slopes and rocky ledges on serpentinite or peridotite, rocky soils. From 2,480 to 2,750 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
Polemonium pulcherrimum var. shastense Mt. Shasta sky pilot	Fed: None State: None CNPS: List 1B.2	Perennial herb occurring in alpine boulder and rock field, and subalpine and upper montane coniferous forest, sometimes on volcanic soils. From 2,175 – 3,900 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
Polystichum lonchitis northern holly fern	Fed: None State: None CNPS: List 3	Perennial rhizomatous herb. Occurs in subalpine and upper montane coniferous forest, on granitic or carbonate soils. From 1,800 – 2,600 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
Potentilla cristae crested potentilla	Fed: None State: None CNPS: List 1B.3	Perennial herb. Occurs in alpine boulder and rock fields, subalpine coniferous forest, seasonally wet swales and seeps, gravelly or rocky sites, often on serpentine. From 1,800 – 2,800 meters in elevation.	August – September	Absent. The project area is below the known elevation range for the species.
Ptilidium californicum Pacific fuzzwort	Fed: None State: None CNPS: List 4.3 BLM: Sensitive	Liverwort occurring in lower montane coniferous forest and upper montane coniferous forest growing as an epiphyte on trees, fallen and decaying logs and stumps, and occasionally on humus on boulders, at approximately 1,800 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
Raillardella pringlei showy raillardella	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows, seeps, bogs, fens and upper montane coniferous forest, from 1,200 to 2,290 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Rosa gymnocarpa var. serpentina Gasquet rose	Fed: None State: None CNPS: List 1B.3	Perennial rhizomatous shrub. Occurs in chaparral and cismontane woodland, on serpentinite soils, often on roadsides, ridges, streambanks, and openings in the vegetation. From 400 – 1,725 meters in elevation.	April – June	Absent. The project area does not support the appropriate soils required t for the species.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Scutellaria galericulata marsh skullcap	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in lower montane coniferous forest, meadows and seeps and marshes and swamps, up to 2,100 meters in elevation.	June – September	Low. Suitable habitat for this species occurs within the Project area, but not observed for more than 100 years.
Silene suksdorfii Cascade alpine campion	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in alpine boulder and rock fields, subalpine and upper montane coniferous forest; rocky, volcanic soils. From 2,355 – 3,110 meters elevation.	July – September	Absent. The project area is below the known elevation range for the species.
Trichodon cylindricus cylindrical trichodon	Fed: None State: None CNPS: List 2B.2	Moss. Occurs on sandy exposed soil and road banks in broadleaf upland forest, meadows and seeps, and upper montane coniferous forest from 50 to 2,000 meters in elevation.	NA	Moderate. Some suitable habitat for this species occurs within the Project area.
Trifolium siskiyouense Siskiyou clover	Fed: None State: None CNPS: List 1B.1	Perennial herb. Occurs in meadows and seeps on mesic soils, sometimes on streambanks. From 880 – 1,500 meters in elevation.	June – July	Moderate. Suitable habitat for this species occurs within the Project area.
Vaccinuium scoparium little-leaved huckleberry	Fed: None State: None CNPS: List 2B.2	Perennial deciduous shrub. Subalpine coniferous forest, rocky areas. From 1,035 – 2,200 meters in elevation.	June – August	Absent. No suitable habitat for this species occurs within the Project area.

Absent: Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.
Low: Species or sign not observed on the site, but conditions marginal for occurrence.
Moderate: Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.
High: Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.
Present: Species or sign of their presence recently observed on the site.

State status
Endangered = listed as Endangered under the California Endangered Species Act

CNPS State Rank
List 1B Plants rare, threatened, or endangered in California and elsewhere
List 2 Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 Plants for which more information is needed; a review list
List 4 Plants of limited distribution; a watch list

CNPS threat extension codes
1 Seriously endangered in California
2 Fairly endangered in California
3 Not very endangered in California

Special-Status Wildlife

Based upon database searches and literature review, the following special-status wildlife species have potential to occur within or in the vicinity of the Project area. The following section describes the distribution, habitat use, and potential for occurrence for each of the species identified.

Based upon database searches and literature review, 30 special-status plant species were identified as potentially occurring within the Project area. An additional species that did not appear in the literature, but is known to occur in the vicinity, was included, bringing the total to 31 special-status species with a potential to occur within the vicinity. Upon further analysis, it was determined that 15of these species have no potential to occur based variables, including lack of suitable habitat, and are not discussed further. Wildlife with potential to occur in the Project area are discussed below; potential to occur based on habitat requirements, soils, elevation, and known populations is shown in Table 4.5-2.

Northern Goshawk (*Accipiter gentilis*)

The northern goshawk breeds in the North Coast Ranges through the Sierra Nevada, Klamath, Cascade, and Warner Mountains, and in Mt. Pinos and the San Jacinto, San Bernardino, and White Mountains (CDFG 2008). It is considered to be well-distributed across the Klamath and Siskiyou Mountains, with an estimate of approximately 1,000 known breeding territories statewide in California (Shuford and Gardali 2008). It typically inhabits mature, dense coniferous forests, primarily ponderosa pine, Jeffrey pine, lodgepole pine, and white fir, at middle and higher elevations, although it can also be found in foothills and deserts, where it will inhabit lower elevation riparian and pinyon-juniper habitats (USFS 2005, CDFG 2008). They may also nest in deciduous trees (USFS 2005).

There is one recorded northern goshawk occurrence within a five-mile radius of the Project, where fledging or nestling activity was observed in 1992, 1995, and 1996 (CDFG 2011, CDFW 2015). There have also been recent nearby occurrences of northern goshawk from 2001, located west of Dunsmuir, where separate nests with fledglings or juveniles were observed each year from 1999 to 2001 (CDFG 2011, CDFW 2015). Northern goshawk has a low potential to occur based on the marginal suitable coniferous forest, and this species may use the area as a flyover or foraging area.

Great blue heron (*Ardea herodias*)

The great blue heron is a common inhabitant of most of the west coast of the United States, in both shallow estuaries and fresh and saline emergent wetlands, lake margins, tidal flats, and rivers and streams. This species can also be found in croplands, pastures, and in mountains above foothills. Great blue heron is a colonial nester and commonly utilizes tall trees and large snags, but may also nest on cliffsides and in secluded areas in emergent wetlands in proximity to foraging areas. This species feeds mostly on fish, but may also prey upon small rodents, amphibians, snakes, lizards, insects, crustaceans, and small birds (Granholm, no date; CDFW 2015).

Great blue heron has been recorded in the Project area, most recently in 2007 in a private pond just north of Browns Lake approximately 0.25 mile from the proposed Lassen Substation. While no suitable nesting habitat occurs, suitable foraging habitat occurs in the Project area, and great blue heron has a low potential to occur.

Suckley's cuckoo bumble bee (*Bombus suckleyi*)

Suckley's cuckoo bumble bee is a brood parasite. This species has lost the ability to develop nests and feed their young, and therefore the females invade the nests of other bees, killing the queen and taking

over the colony. The female then lays her eggs and forces the workers of the existing colony to feed her and her young. Upon hatching, the young feed upon the larvae of the previous queen, and eventually disperse: the females seek out other nests to parasitize, and the males seek out mates (Hatfield et. al. 2015).

Suckley's cuckoo bumble bee is native to the U.S., and its range includes the Pacific coast from Alaska to northern California, and east to Nebraska (CDFW 2015). This species is an obligate nest parasite and its relative abundance depends directly on that of its hosts, and threats include pesticide use, habitat destruction, and climate change. Suckley's cuckoo bumble bee was last recorded in the Project area in 1958; however, other species of bees occur in the area, and therefore suitable habitat may be present. Suckley's cuckoo bumble bee has a moderate potential to occur in the Project area.

Swainson's hawk (*Buteo swainsoni*)

The Swainson's hawk is a medium-sized *Buteo* hawk with relatively long, pointed wings and a long, square tail. They are well-known for their very long distance migration between North American breeding grounds and wintering grounds on the South American Pampas, a 12,000 mile round trip; among raptors this distance is second only to peregrine falcons. Flocks of several thousand Swainson's hawks are commonly observed migrating over observation points in Central America—"one of the most spectacular and easily observed movements of birds in the new world, and possibly anywhere" (Bechard et al. 2010).
Swainson's hawk breeding habitat includes grasslands or agricultural areas with scattered trees. They often nest in trees located in riparian areas with adjacent suitable foraging areas such as grasslands or alfalfa or grain fields (Bechard et al. 2010). Swainson's hawks are generally widespread within western North America but the California population is restricted to the Central Valley and scattered pockets within the Great Basin and West Mojave Desert including the Antelope Valley. The loss of agricultural lands to various residential and commercial developments is a serious threat to this hawk throughout California (Bechard et al 2010). Though not listed under the federal Endangered Species Act, the Swainson's hawk is listed as a California state threatened species under the California Endangered Species Act. Although there are no CNDDB records of this species in the area, there have been observations in the vicinity (Babcock 2015, personal communication). Swainson's hawk has a low potential to occur based on the marginal suitable nesting habitat in the Project Area, as well as suitable foraging habitat in the open fields, and this species may use the area as a flyover or foraging area.

Confusion caddisfly (*Cryptochia shasta*)

Little is known of the ecology and life history of the confusion caddisfly. This species is known from only one type locality; in 1973, a male was collected from a creek near Castle Crag State Park, approximately 7.5 miles south of the Project. Required habitat of this species is unknown; however, larvae of other *Cryptochia* species are found in small, cold, first- and second-order streams where they construct a buoyant case from woody debris. Larvae of other *Cryptochia* species then crawl onto the shore where they are suspected of feeding upon fungi (Shanks, no date).

The confusion caddisfly has one recorded observation dating from 1973 near Castle Crag State Park. Other sensitive *Cryptochia* species (i.e., *Cryptochia denningi* and *C. excella*) have been recorded in Placer, Tulare, and Inyo Counties, and in the Sierra Nevada. Suitable habitat, including first-order streams in the form of agricultural ditches, for other *Cryptochia* species is present in the Project area, however, and the confusion caddisfly is considered to have a moderate potential to occur.

Willow Flycatcher (*Empidonax traillii*)

Willow flycatchers historically occurred throughout California wherever suitable habitat was present (Craig and Williams 1998). Currently, it is known to occur in wet meadow and montane riparian habitats in the Sierra Nevada and Cascade Ranges, as well as along the Santa Ynez River in Santa Barbara County, several locations in San Diego County, and along the Colorado River (Sedgwick 2000, CDFG 2008). As of 2000, in the Sierra Nevada and Cascade region in California, this species was believed to be restricted to southeastern Shasta County south to northern Kern County, including Alpine, Inyo, and Mono Counties in between (Sedgwick 2000). Characteristic habitat for this species includes willow thickets in or adjacent to standing or running water, typically in valleys, canyon bottoms, mountain seeps, and ponds and lakes (Sedgwick 2000). In California, willow clumps are often preferred.

There are two recent recorded observations of this species from the general Project vicinity. In 2004, six breeding individuals were detected along Pig Creek in an area spanning from 2.3 to 2.8 miles south-southwest of McCloud (CDFG 2011, CDFW 2015), and another site documented in 1992 as having activity. The Project vicinity generally lacks a large amount of willow and riparian habitat that would be capable of supporting this species, but does contain large amounts of wet meadow habitat. Willow flycatcher has a low potential to occur in the Project area.

Spotted Bat *(Euderma maculatum)*

The spotted bat is a year-round resident of eastern California, including the southeastern portion of Siskiyou County, and most of Southern California (CDFG 2008). It is present in southern British Columbia and through Washington, Oregon, California, Idaho, Montana, Wyoming, Utah, Colorado, New Mexico, Arizona, Texas, and Mexico (Reid 2006). Spotted bat occurs in variable habits ranging from arid deserts to ponderosa pine forests and grasslands, to elevations of over 10,000 feet (Reid 2006, CDFG 2008). Its preferred roosting habitat is rock crevices in cliffs, but it can also be found in caves or in buildings (CDFG 2008). It may forage up to 50 miles from its roost (Reid 2006).

The recorded occurrence of this species nearest to the Project is approximately 1.25 miles south of the proposed substation site, where individuals were detected by calls in 1993 (CDFW 2015). Individuals were detected by recorded calls at Castle Lake (1993) and Castle Crags State Park (1994). Spotted bat has a moderate potential to occur within the Project area. While there is limited roosting habitat in the Project vicinity, this species may use the Project area for foraging, especially over the various water bodies.

Western Mastiff Bat *(Eumops perotis californicus)*

The western mastiff bat occurs throughout Southern California, along the coast from Monterey County south, and within the California Central Valley north to the eastern half of Siskiyou County. It occurs in open semi-arid to arid habitats, such as conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas (CDFG 2008). Roosting generally occurs in crevices in cliff faces, high buildings, trees, and tunnels, with at least 10 feet of space between the roost and the ground to drop-off vertically for flight (Reid 2006, CDFG 2008). This species is non-migratory and will move between different roosts either alone or with a colony of other bats. Individuals may forage up to 15 miles away from their roosts (Reid 2006).

There are two CNDDB records for this species in the Project vicinity, both from 1993 (CDFW 2015). The closest is at Ney Springs, three miles south of the Project, where between one and three bats were detected, and the second occurrence is in Dunsmuir, where one to three individuals were also detected. Suitable roosting and foraging habitat is present around the Project area, and western mastiff bat has a moderate potential to occur.

Bald Eagle *(Haliaeetus leucocephalus)*

The bald eagle is resident throughout much of California, with breeding limited to Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. The species is a relatively common local winter migrant at several inland waters in Southern California, and approximately half of the wintering population is in the Klamath Basin. Habitat generally consists of large trees and snags, especially ponderosa pine, within one mile of large water bodies where they can forage.

Bald eagles are considered to be recent occupants in the Shasta and Strawberry Valleys. A nest was discovered at the southeast end of Lake Shastina by CDFG in 1996 (CDFG 2011), although the success of this nest beyond 1997 is unknown. Additionally, a bald eagle nest was monitored at Lake Siskiyou from 1989 to 1997, with fledglings in at least four of these years, although its success since 1997 is also unknown (CDFW 2015). The Project vicinity contains potential nesting, roosting, and foraging habitat for the bald eagle, due to the abundance of tall coniferous trees along the perimeter of the site and the proximity of the Project to Lake Siskiyou. Bald eagle has a low potential to occur in the Project area, but a high potential to occur nearby at Lake Siskiyou.

Leaden Slug *(Hesperarion plumbeus)*

Leaden slug is known from only two recorded locations in northeasterrn Shasta County. The species' hlotype was collected in 23000, in Castle Creek, west/northwest of its confluence with South Fork Castle Creek. One paratype was collected the same year, in Root Creek approximately 1.4 miles northwest of its confluence with Castle Creek. Habitat requirements for this species are known only from the habitat from which they were collected: riparian areas along creeks (CDFW 2015).

Suitable habitat occurs in the Project area, and the leaden slug has a moderate potential to occur.

Silver-haired bat *(Lasionycteris noctivagans)*

The silver-haired bat occurs in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats at elevations below 9,000 feet (2750 meters). This species roosts in hollow trees, snags, buildings, rock crevices, and under loose bark, and requires streams, ponds, and open brushy areas for foraging. Silver-haired bat also needs access to water due to its poor ability to concentrate urine (Harris 2005).

Although suitable habitat for the silver-haired bat occurs in the Project area, it has not been recorded since 1958 (CDFW 2015). The silver-haired bat has a low potential to occur.

2015), it is determined that the natural bridge megomphix has a low potential to occur.

Osprey *(Pandion haliaetus)*

The osprey breeds across northern California from the Cascade Ranges south to Lake Tahoe and coastally to Marin County (CDFG 2008). It is present throughout the rest of its California range, including the California Coast to the western foothills of the Cascades, and the western edge of southeastern California desert, mainly in the winter (Poole et al. 2002). Known regular breeding locations include Shasta Lake, Eagle Lake, Lake Almanor, and other lakes, reservoirs, and rivers (CDFG 2008). Its habitat is typically characterized by ponderosa pine and mixed conifer close to large bodies of water, such as rivers, lakes, reservoirs, bays, estuaries, and surf, with abundant fish (CDFG 2008).

There are multiple osprey nests recorded within five miles of the Project area from since 2001 (CDFW 2015). The earliest recorded occurrence nearest the Project dates from 2003, and consisted of a nest located in a radio tower near the junction of I-5 and Highway 89; two adults were observed

nesting at this location. The remaining occurrences were all detected in 2005. Two of these were located within 0.5 mile of each other, where adult ospreys were observed nesting but did not appear to be caring for any chicks. It is believed that their reproductive efforts failed that year. A third nest was detected, but no activity was observed, and the fourth nest, located on a cellular tower, was observed to be successful (CDFW 2015). While no suitable nesting habitat occurs, osprey has a moderate potential to occur within the Project area as a flyover.

West coast fisher (*Pekania pennanti*)

The west coast fisher is found in the Cascade Mountains west to the coast from Washington and Oregon, the North Coast from Mendocino County, California north to Oregon; east across the Klamath, Siskiyou, Trinity, and Marble Mountains, and across the southern Cascade Mountains; and south through the Sierra Nevada (USFWS 2014). This species occupies coniferous forests with intermediate- to large tree stands, and deciduous riparian areas with a high percent of canopy closure. West coast fisher requires cavities, snags, logs, and rocky areas for both cover and denning (CDFW 2015).

West coast fisher has been observed multiple times in the Project area as recently as 2009 (CDFW 2015). Marginal suitable habitat for this species occurs in the Project area, and the west coast fisher has a low potential to occur.

Cascades Frog (*Rana cascadae*)

In California, the Cascade frog is distributed from the Shasta-Trinity region eastward toward the Modoc Plateau and southward to the Lassen region and the upper Feather River system (Stebbins 2003). Preferred habitats include montane aquatic habitats, such as mountain lakes, small streams, and ponds (CDFW 2015), as well as moist meadows and wetlands (Elliott et al. 2009). In northern California, known populations of this species seem to be restricted to elevations higher than 1,220 meters (4,000 feet; Garwood and Welsh Jr. 2007). Recent surveys from Butte County northward through the Lassen National Park region to the Modoc Plateau area of eastern Siskiyou County failed to reveal any Cascades frogs at localities where they were historically known to occur. Only two adults of this taxon were found in each of two recent survey years in one location in Lassen Volcanic National Park. Surveys in the upper McCloud River system found moderate to abundant populations in lakes and slow stream channels that contained few or no fish.

There are no recent occurrences of this species within five miles of the Project area, although there are two historical reported occurrences within this buffer (CDFW 2015), with several more recorded sightings located just outside the five-mile search radius. Cold Creek, which crosses the Project Area is slow moving, and combined with the presence of moist meadows and marsh, provides suitable habitat for Cascades frog,, but the species does was not observed within or in the vicinity of the proposed Project. Cascades frog has a moderate potential to occur.

Castle Crags rhyacophilan caddisfly (*Rhyacophila lineata*)

Little is known of the Castle Crags rhyacophilan caddisfly. This species is known from only one recorded observation in 1950, when one male was collected in Castle Crags State Park (CDFW 2015). Specific habitat requirements of this species are unknown, as is the range, but habitat requirements for other species within this genus include a wide variety of running-water habitats, and some species are adapted to intermittent streams (Shanks, no date).

Habitat for *Rhyacophila* spp. occurs in the Project area (e.g. Cold Creek and Big Springs Creek), and the Castle Crags rhyacophilan caddisfly has a moderate potential to occur.

Bilobed rhyacophilan caddisfly (*Rhyacophila mosana*)

Like the Castle Crags rhyacophilan caddisfly, little is known of the bilobed rhyacophilan caddisfly. This species is known from only one recorded observation made in 1965, in Castle Crags State Park (CDFW 2015). Specific habitat requirements of this species are unknown, as is the range, but habitat requirements for other species within this genus include a wide variety of running-water habitats, and some species are adapted to intermittent streams (Shanks, no date).

Habitat for *Rhyacophila* spp. occurs in the Project area (e.g. Cold Creek and Big Springs Creek), and the Castle Crags rhyacophilan caddisfly has a moderate potential to occur.

Siskiyou hesperian (*Vespericola sierranus*)

Siskiyou hesperian is a freshwater mollusk distributed in Oregon near Upper Klamath Lake, Crater Lake National Park, and Klamath River in the Rogue River National Forest (Stone 2009); and in California from one recorded observation in the Shasta River two miles north of the City of Weed (CDFW 2015). This species occurs in perennially moist riparian habitat including seeps, springs, deep leaf litter along streambanks, and under debris and rocks. Siskiyou Hesperian is most common in the lower portions of moist valleys, ravines, gorges, or talus in area not subject to regular flooding, and may also occur in areas with running water or alongside streams and spring pools (Stone 2009).

Suitable habitat for Siskiyou Hesperian occurs in the Project area, and this species has a moderate potential to occur.

TABLE 4.5-2 SPECIAL-STATUS ANIMAL SPECIES AND POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Accipiter gentilis northern goshawk	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Coniferous forests, particularly red fir, lodgepole pine, Jeffrey pine, and aspens. Usually nests on north-facing slopes.	Low. Marginal suitable nesting and foraging habitat and prey base occurs within the Project area.
Aplodontia rufa californica Sierra Nevada mountain beaver	Fed: None State: SSC	Occurs in riparian scrub, riparian forest, and riparian woodland.	Absent. No suitable habitat occurs within the Project area.
Ardea herodias great blue heron	Fed: None State: None CDFW: tracked	Found in brackish and freshwater marsh, swamps and wetlands, and riparian forests.	Low. No suitable nesting habitat occurs, but some suitable foraging habitat occurs within the Project area.
Ascaphus truei Pacific tailed frog	Fed: None State: SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir, and ponderosa pine habitats. Restricted to perennial streams. Tadpoles require water temperatures below 15° C.	Absent. No suitable habitat occurs within the Project area.
Bombus suckleyi Suckley's cuckoo bumble bee	Fed: None State: None CDFW: tracked	A nest parasite, this species occurs where other bumble bees are present in numbers.	Moderate. Some suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Buteo swainsonii Swainson's hawk	Fed: BCC State: Threatened	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands, and forages in adjacent open flatlands including grasslands and agricultural fields.	Low. Some suitable breeding habitat occurs within the BSA, and some suitable foraging habitat.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Fed: **THR** State: **END** BLM: Sensitive	Nests in multi-layered riparian habitat with canopies of willow and cottonwood with understories of blackberry, nettles, or wild grape.	Absent. No suitable habitat occurs within the Project area.
Cryptochia shasta confusion caddisfly	Fed: None State: None	Requires small, cold first-order and second-order streams.	Moderate. Some suitable habitat occurs within the Project area.
Cypseloides niger black swift	Fed: None State: SSC	Forms small colonies on cliffs near or behind waterfalls in canyons or on bluffs.	Absent. No suitable habitat occurs within the Project area.
Empidonax traillii willow flycatcher	Fed: None State: **END**	Nests in thick riparian habitat dominated by willows, and in wet meadow and montane riparian habitats.	Low. Marginal suitable habitat occurs within the Project area.
Emys marmorata western pond turtle	Fed: None State: SSC	Occurs primarily in ponds, marshes, or slow-flowing rivers, streams, and irrigation ditches. Requires basking sites inside the water or on the bank and requires sandy banks or grassy fields within 0.5 km for egg-laying.	Absent. No suitable habitat occurs within the Project area.
Euderma maculatum spotted bat	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in a range of arid and semi-arid habitats.	Moderate. Some suitable habitat occurs within the Project area.
Eumops perotis californicus western mastiff bat	Fed: None State: SSC BLM: Sensitive	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in a range of arid and semi-arid habitats, including chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	Moderate. Some suitable habitat occurs within the Project area.
Falco peregrinus anatum American peregrine falcon	Fed: Delisted State: **FP**	Nests in scrapes, depressions, or ledges in open areas near water or on cliffs, dunes, or man-made structures.	Absent. No suitable habitat occurs within the Project area.
Gulo gulo California wolverine	Fed: None State: **THR**, **FP** FS: Sensitive	High elevation caves, logs, or burrows with available nearby water. Hunts in open areas.	Absent. No suitable habitat occurs within the Project area.
Haliaeetus leucocephalus bald eagle	Fed: Delisted State: **END**, **FP** BLM: Sensitive FS: Sensitive	Nests in large, open trees, especially ponderosa pines, generally within one mile of rivers or open water for foraging.	Low. Marginal suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Hesperarion plumbeus leaden slug	Fed: None State: None CDFW: tracked	Found in riparian vegetation along creeks.	Moderate. Some suitable habitat occurs within the Project area.
Larus californicus California gull	Fed: None State: WL	Nests in colonies on islets in large interior lakes.	Absent. No suitable habitat occurs within the Project area.
Lasionycteris noctivagans silver-haired bat	Fed: None State: None	Found in lower montane coniferous forest, old-growth forest, and riparian forest.	Low. Marginal suitable habitat occurs within the Project area.
Lepus americanus klamathensis Oregon snowshoe hare	Fed: None State: SSC	Thick patches of alder and willow in riparian areas or of conifers, above the yellow pine zone.	Absent. No suitable habitat occurs within the Project area. This species occurs at elevations above the Project area.
Martes caurina Pacific marten	Fed: None State: None FS: Sensitive	Uses cavities, snags, logs, and rocky areas in large spans of mature, dense, coniferous or deciduous forests, usually old-growth.	Absent. No suitable habitat occurs within the Project area.
Megomphix californicus natural bridge megomphix	Fed: None State: None FS: Sensitive	Found in old-growth and riparian forest, preferring moist valley, ravines, gorges, and talus sites near persistent water.	Absent. No suitable habitat occurs within the Project area.
Ochotona princeps schisticeps gray-headed pika	Fed: None State: None CDFW: tracked	Found in alpine talus and scree slopes.	Absent. No suitable habitat occurs within the Project area.
Pandion haliaetus osprey	Fed: None State: WL	Nests in trees within 15 miles of water with high fish abundance, such as the ocean, lakes, or streams.	Absent. No suitable habitat occurs within the Project area.
Pekania pennanti west coast fisher	Fed: **Proposed THR** State: **Candidate THR** BLM: Sensitive FS: Sensitive	Uses cavities, snags, logs, and rocky areas in large spans of mature, dense, coniferous or deciduous forests, usually old-growth.	Low. Marginal suitable habitat occurs within the Project area.
Rana boylii foothill yellow-legged frog	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Occurs in a large number of habitats with partly-shaded, shallow streams and riffles with rocky substrate.	Absent. No suitable habitat occurs within the Project area.
Rana cascadae Cascades frog	Fed: None State: SSC FS: Sensitive	Montane aquatic habitats, including moist meadows, open wetlands, streams, pools, ponds, and lakes, as well as open coniferous forests. Requires standing water for reproduction.	Moderate. Some suitable habitat occurs within the Project area.
Rhyacophila lineata Castle Crags rhyacophilan caddisfly	Fed: None State: None CDFW: tracked	Occurs in aquatic habitats such as creeks and springs.	Moderate. Some suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
Rhyacophila mosana Bilobed rhyacophilan caddisfly	Fed: None State: None CDFW: tracked	Occurs in aquatic habitats such as creeks and springs.	Moderate. Some suitable habitat occurs within the Project area.
Vespericola sierranus Siskiyou hesperian	Fed: None State: None CDFW: tracked	Occurs in riparian habitats, including springs, seeps, and deep leaf-litter along streambanks, and under rocks and debris. Preferred sites are within moist ravines, valleys, gorges, and talus sites with permanent water sources.	Moderate. Some suitable habitat occurs within the Project area.
Vulpes vulpes necator Sierra Nevada red fox	Fed: None State: Threatened FS: Sensitive	Dense vegetation and rocky areas in forests interspersed with meadows or alpine fell-fields. Typically, alpine, alpine dwarf scrub, broadleaved upland forest, subalpine and upper montane coniferous forest, meadows, riparian scrub, and wetlands.	Absent. No suitable habitat occurs within the Project area.

Absent: Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.
Low: Species or sign not observed on the site, but conditions marginal for occurrence.
Moderate: Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.
High: Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.

Federal status

Endangered = listed as Endangered under the federal Endangered Species Act
Threatened = listed as Threatened under the federal Endangered Species Act
Candidate = a Candidate for listing under the federal Endangered Species Act
BCC = designated as a Bird of Conservation Concern

State status

Endangered = listed as Endangered under the California Endangered Species Act
Threatened = listed as Threatened under the California Endangered Species Act
SSC = designated as a Species of Special Concern
FP = designated as a Fully Protected species
WL = designated as a Watch List species

CDFW

Tracked = this species is only listed by the CNDDB and may be locally sensitive or its occurrences may be monitored to see if further protection is needed

Applicant Proposed Measures

Applicant Proposed Measures (APMs) are intended to minimize the potential for impacts resulting from construction, operation, and maintenance of the proposed Project before such impacts can occur. APMs differ from mitigation measures, which are typically proposed for the purpose of mitigating specific impacts after they occur.

Specific APMs intended to avoid or minimize the potential for Project-related impacts to biological resources are described in Table 4.5-3 below.

TABLE 4.5-3 APPLICANT PROPOSED MEASURES

APM #	DESCRIPTION
APM BIO-1	Focused pre-construction surveys for special-status plant species shall be conducted in appropriate habitat, according to USFWS and CDFW protocols for species having a specified protocol, or according to standard, scientifically accepted systematic surveys appropriate for each species. Surveys will be conducted in areas of planned ground disturbance. To the extent feasible, avoidance modifications in the placement of transmission towers, access and spur roads, and of various marshalling and staging areas shall be made in accordance with the final Project design and needs. If special-status plant species are located during focused surveys within the Project area, avoidance measures shall be incorporated. If avoidance is not possible, relocation efforts, including topsoil salvage and relocation, if necessary, will be implemented. If PacifiCorp proposes any changes to the current construction plan or pole replacement sites after focused surveys for special-status species are conducted, additional field surveys shall be required prior to construction activities. Pre-construction biological clearance surveys shall be conducted to avoid or minimize potential impacts to special-status wildlife species. If burrows are located during surveys, avoidance measures shall be incorporated and the Environmental Monitor shall proceed as described in APM BIO-6.
APM BIO-2	Prior to first use, the under-carriages, wheels, and bodies of construction and operations equipment previously used outside of the Project area shall be thoroughly washed in maintenance yards by high pressure jets to eliminate any soil buildup that may contain invertebrates, such as insects and insect eggs, or the seeds of exotic plant species.
APM BIO-3	Every reasonable effort shall be made to minimize temporary and permanent removal of native vegetation at work areas. If required, native vegetation shall be flagged for avoidance. If native vegetation cannot be avoided, it will be crushed rather than bladed. A project revegetation plan shall be prepared for areas of native vegetation temporarily affected by Project construction activities.
APM BIO-4	Construction crews shall avoid affecting the streambeds and banks of any streams along the route, to the extent feasible. If necessary, a LSAA will be secured from the CDFW. Impacts will be mitigated based on the terms of the LSAA. No streams with flowing waters or those capable of supporting special-status species would be expected to have permanent adverse impacts from project implementation.
APM BIO-5	To avoid impacts from temporary access to wetland areas, existing access roads and temporary access methods (e.g., high density polyethylene driving mats, portable road platforms) shall be used to access pole replacement sites. Results of the wetland delineation (Appendix D) shall be incorporated into vehicle access routes, which shall be designed to avoid and minimize wetland disturbance.
APM BIO-6	Environmental Monitors shall be assigned to the Project, and will be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, or unique resources are avoided to the fullest extent possible. The monitor shall delineate and mark for avoidance in the field all known sensitive resource locations and, where appropriate, use flagging to delineate boundaries of areas from where activities are restricted to protect native plants and wildlife, or special-status species. If the monitor determines that project activities may adversely affect the species, the monitor shall consult with USFWS and/or CDFW regarding appropriate avoidance measures. These restricted areas shall be monitored during construction to ensure their protection.
APM BIO-7	PacifiCorp shall conduct all pole installation, conductor installation, tree trimming, tree removal, grading and clearing of vegetation from September 1 – February 28, outside of the nesting season. The March 1 – August 31 nesting season dates are guidelines: nesting season may begin earlier or end later depending on

APM #	DESCRIPTION
	weather conditions; nests will be protected regardless of the calendar date. If construction cannot be completed outside of the nesting season, pre-construction surveys within the Project area will be conducted by a qualified biologist for nests prior to ground disturbance, tree trimming or other construction activities. The nesting bird clearance survey will be conducted within three days prior to construction activities. For passerines, a 50-foot buffer will be installed around the nest and maintained around the nest until the young have fledged. A larger buffer may be required if nesting birds appear stressed. Nesting raptors require a larger buffer area than passerines. If a raptor nest is observed, a 300-foot buffer will be installed. If a nesting raptor is observed within 300 feet of the Project area prior to the start of construction, a qualified biologist will determine whether or not construction activities could potentially disturb nesting raptors and implement appropriate measures (e.g., onsite monitor, timing restriction) to adequately protect nesting raptors.
APM BIO-8	A WEAP shall be prepared and all construction crews and contractors shall be required to participate in WEAP training prior to starting work on the Project. The WEAP training shall include a review of the special-status species and other sensitive resources that could occur in the Project area, the locations of any existing sensitive resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained shall be maintained.
APM BIO-9	Migratory bird flight paths in the Project area are currently unknown. An impact assessment study and bird observation surveys shall be conducted according to APLIC's (1994) survey protocol. The surveys shall be conducted within wetlands along both sides of the existing transmission line within the study area. The surveys shall be done in consultation with CDFG. Results of the bird observation surveys will determine potentially impacted species and locations to mark wires to increase their visibility to flying birds. Line markers should be designed to be raptor-safe in accordance with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2012 (APLIC 2012), evaluated and approved by PacifiCorp engineers prior to implementation.
APM BIO-10	Vehicles shall be restricted to previously established roadways and access routes.
APM BIO-11	Trash, dumping, firearms, open fires, hunting, and pets shall be prohibited in the Project area.

4.5.3 Environmental Impacts

Ground disturbance for the Project would occur mostly in areas already disturbed by residential activity, infrastructure, or cattle grazing. The pole replacement and reconductored transmission line would follow the existing power line and would not require new permanent disturbance. Existing access roads would be used where possible during construction, and no new permanent access roads would be constructed. The proposed Project entails relatively limited amounts of disturbance in very small areas (i.e., pole sites) and on previously disturbed residences. Pole replacement in wetlands along the existing transmission line corridor would be conducted using temporary construction pads, geomats, portable road platforms, or similar methods and would result in minimal disturbance to wetlands and wetland vegetation. Minimal, temporary impacts to wetlands may occur at the on-ground installation point where vegetation is crushed by construction pads; however, this report does not identify any significant impact to organisms associated with wetlands or aquatic habitats, which includes plants and wildlife such as amphibians, reptiles, and riparian birds.

Direct impacts occur when biological resources are altered or destroyed during the course of, or because of, Project implementation. Examples of such impacts include removal of vegetation, filling wetland habitats, or severing or physically restricting the width of wildlife linkages. Other direct impacts may include loss of foraging or nesting habitat and loss (take) of individual organisms because of habitat clearing.

Indirect impacts may include elevated levels of noise or lighting, changes in surface water hydrology within a watershed, and increased erosion or sedimentation. Indirect impacts can affect vegetation communities or their potential use by sensitive animals. These impacts may affect the breeding and foraging behavior of animals both on and off the Project site. Permanent impacts may result in

irreversible damage to biological resources. Temporary impacts are interim changes in the local environment due to construction that would not extend beyond Project-associated construction.

Would the Project:

a) Have a substantial adverse effect, either directly or indirectly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation Incorporation.

General Impacts

Sixteen sensitive wildlife species and 26 sensitive plant species potentially occur within the Project area, based on habitat requirements. These species are discussed in Appendix C – *Biological Habitat Assessment Report*. Potential impacts to these species and Applicant Proposed Measures (APMs) that would avoid or minimize them are discussed below.

Sensitive Plants

Given to lack of appropriate habitat and elevation of the Project area, only 24 of 66 reviewed sensitive plant species have potential to occur in the Project area. Most of those species have a potential to occur based on habitat, elevation, soils, and proximity to known recorded occurrences of the species.

With implementation of APM BIO-1 (pre-construction surveys), sensitive plants located during pre-construction surveys or during construction, will be avoided to the fullest extent feasible. If avoidance is infeasible, efforts such as topsoil salvage or plant relocation will be implemented to minimize potential for impact by construction activities. Implementation of APM BIO-6 (Environmental Monitors during construction activities) would ensure areas where sensitive plants are located would be avoided during construction activities. Potential for habitat modification through removal of native vegetation, including wetland vegetation, through removal of native vegetation would be avoided or minimized through implementation of APM BIO-3 (minimize impacts to native vegetation) and APM BIO-2 (vehicle undercarriage washing) and APM BIO-10 (established roadways and access routes).

With implementation of the above APMs, impacts to sensitive plant species would be less than significant and no mitigation would be required.

Bats

Sensitive bat species may occur within the Project area. Two special-status species of bats have moderate potential to occur within the Project area, and one species has a low potential to occur. The spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), and silver-haired bat (*Lasionycteris noctivagans*) may occur within the Project area during nocturnal foraging; however, as nighttime construction is not anticipated, significant impacts to these species as result of the Project are unlikely. Removal of vegetation on the Project area may reduce the numbers of some insect prey that could be used by these species; however, the quantity of prey that would be impacted is considered inconsequential. Within implementation of APM BIO-1 (pre-construction surveys), no additional mitigation would be required.

Raptors

Three species of raptors have a potential to occur in the Project area; northern goshawk (*Accipiter gentilis*), American peregrine falcon (*Falco peregrinus anatum*), and Swainson's hawk (*Buteo Swainsonii*). Raptors are likely to utilize the Project area for foraging, but roosting or nesting is unlikely. Removal of vegetation in the Project area may reduce the numbers of some prey that could be used by these species, at least temporarily; however, the quantity of prey that would be impacted is considered inconsequential. Spacing between conductors and grounding surfaces on the 69 kV structures for this Project would be adequate to preclude electrocution potential for raptors. Replacement poles would meet the Avian Power Line Interaction Committee (APLIC) suggested practices for avian protection on power lines (APLIC 2006). With implementation of APM BIO-1 (preconstruction surveys), APM BIO-7 (avoid impacts to active nests), and APM BIO-9 (bird surveys/impact assessment and line marker placement, and avian protection), impacts to raptor species would be less than significant and no additional mitigation would be required.

Migratory and Nesting Birds

Other special-status avian species have a potential to occur within the Project area; great blue heron (*Ardea Herodias*) and willow flycatcher (*Empidonax trallii*). The trees, shrubs, ruderal vegetation, and other structures in the Project area provide suitable nesting habitat for a number of common and special-status birds protected by the MBTA. As discussed above, the MBTA prohibits the killing of migratory birds. Conducting vegetation clearing and other ground disturbing activities outside of the avian nesting season (late February to early July) would minimize the potential for impacts to birds and potential violation of the MBTA.

If construction occurs during the breeding season, the construction area will be surveyed for nests prior to initiation of construction activities. Pre-construction bird observation surveys would determine if migratory bird corridors occur within the Project limits and identify active nests. With implementation of APM BIO-1 (preconstruction surveys), APM BIO-7 (avoid impacts to active nests), and APM BIO-9 (bird surveys/impact assessment and line marker placement, and avian protection), impacts to migratory and nesting bird species would be less than significant, and no additional mitigation would be required.

Mammals

Two special-status mammals have a moderate potential to occur in the Project area: spotted bat (*Euderma maculatum*) and western mastiff bat (Eumops perotis californicus). Two special-status mammal species, silver-haired bat (*Lasionycteris noctivagans*) and west coast fisher (*Pekania pennant*), have a low potential to occur in the Project area. Three other species (California wolverine, Oregon snowshoe hare, Pacific marten, gray-headed pika, and Sierra Nevada red fox) known to occur in the vicinity, but are unlikely to occur in the project area, and are considered absent. With implementation of APM BIO-1 (preconstruction surveys), APM BIO-6 (Environmental Monitors during construction activities), APM BIO-6 (Worker Environmental Awareness Program), and APM BIO-11 (restrictions on vehicles, trash, firearms, and pets) impacts to special-status mammal species would be less than significant and no additional mitigation would be required.

Reptiles

One sensitive reptile species, western pond turtle (*Emys marmorata*), is known to occur in the vicinity, but is unlikely to occur in the project area due to lack of suitable habitat, and is considered absent. may occur in riparian areas in the Project area.

Amphibians

One sensitive amphibian species may occur in the Project area; Cascades frog (*Rana cascadae*) has a moderate potential to occur within the Project area. Amphibians are highly susceptible to impacts from vehicles and construction equipment activities. Vegetation and ground disturbances may crush individuals on the surface, among vegetation, in burrows, or sequestered beneath surface debris and rocks. No practical method is available to mitigate for many of these smaller animals; however, with implementation of APM BIO-1 (preconstruction surveys), APM BIO-3 (minimize vegetation impacts), APM BIO-4 (minimize riparian disturbance), APM BIO-5 (temporary access to wetlands), APM BIO-6 (Environmental Monitor during construction activities), and APM BIO-10 (restriction to established roadways and access routes), impacts to sensitive amphibian species would be less than significant and no additional mitigation would be required.

Invertebrates

Six special-status invertebrate species may occur within the Project area (Suckley's cuckoo bumble bee, confusion caddisfly, leaden slug, Castle Crags rhyacophilan caddisfly, bilobed rhyacophilan caddisfly, and Siskiyou Hesperian). Habitat with which these species have been associated occurs within the Project area, but little else is known about their life habits. No practical method is available to mitigate for many of these species; however, with implementation of APM BIO-3 (minimize vegetation impacts), APM BIO-4 (minimize riparian disturbance), APM BIO-5 (temporary access to wetlands), APM BIO-6 (Environmental Monitor during construction activities), and APM BIO-10 (restriction to established roadways and access routes), impacts to sensitive invertebrate species would be less than significant. No mitigation would be required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact. Vegetation clearing for access to pole sites and pole replacement has the potential to remove plants that may provide forage and cover for wildlife species; however, impacts associated with vegetation clearing would be minimized to the greatest extent feasible with AMP BIO-3. Removal of vegetation also increases the potential for post-construction erosion. Project APMs that address erosion protection would minimize the potential for such effects (APM BIO-4). Invasive plants may compete with native vegetation for resources, and may also change the local fire regime. Invasive plant species may not be palatable alternatives for special-status species that utilize native vegetation in the area. Implementation of APM BIO-2 (vehicle undercarriage washing), potential for construction vehicles and equipment to carry non-native vegetation into the Project area will be minimized. With further implementation of APM BIO-5 (temporary wetland access) and of APM BIO 6 (Worker Environmental Awareness Program), impacts to vegetation would be less than significant. No additional mitigation would be required.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant. Permanent impacts to wetlands would consist of placing fill, in the form of new poles and backfill materials, in wetlands or areas that are deemed wetland mitigation areas. The new poles would be 19 inches in diameter with a permanent footprint of 1.77 square feet per pole, once installed. North of the existing Mt. Shasta Substation, 14 poles would be replaced in wetlands, including 8 poles that would be replaced in the wetland mitigation area (Morgan-Merrill Wildlife

Preserve, as discussed in Section 4.5.2). Installation of these 14 poles would result in permanent impacts of 28.58 square feet (0.0007 acre) in wetland areas.

Temporary impacts would result from ground disturbance for temporary access to pole sites and disturbance of wetlands during construction activities, including removal of the distribution line adjacent to Cold Creek in the Morgan-Merrill Wildlife Preserve, resulting in a temporary disturbance area of 1.978 acres (86,165.6 square feet) to wetlands. Construction vehicles and equipment could create ruts, or compress soils. Removal of wetland vegetation could alter wetland ecosystems and result in localized erosion, and filling of waters or wetlands downgradient through sedimentation.

Given the nature of the proposed Project and the location of the ROW, impacts resulting from pole placement cannot be avoided; however, with implementation of APM BIO-5 (temporary wetland access), APM BIO-3 (minimize vegetation impacts), and APM BIO-10 (restriction to established roadways and access routes) impacts to these wetlands, and to the swale near Pole 23/48 would be minimized. Access through wetlands and to pole work areas would be conducted using geomats, portable road platforms, or similar methods to minimize the potential for creating ruts or causing soils compression. To the greatest extent feasible, wetland vegetation would be crushed rather than bladed (APM BIO-3). Cold Creek and its associated riparian habitat, banks, and streambed would be avoided by the Project to the maximum extent feasible; access roads would be designed to avoid crossing or otherwise affecting this riparian area to the maximum extent feasible, in compliance with APM BIO-4 (avoidance of streambeds and banks). Should proposed Project circumstances make avoidance infeasible, PacifiCorp would consult with the CDFW and, if required, obtain a Lake or Streambed Alteration Agreement in compliance with Section 1602 CDFG. With implementation of APM BIO 6 (Environmental Monitors during construction), and APM BIO-8 (WEAP), impacts to wetlands would be less than significant and no additional mitigation would be required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant. The majority of the proposed Project would be located within open space areas, allowing free movement of wildlife species. Due to the relatively small size of the structures, the large spans between structures, and the open landscape, the Project as proposed would not interfere substantially with the movement of any wildlife species. During construction, temporary construction-related noise may have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Wildlife species stressed by noise may temporarily disperse from habitat in the vicinity of the proposed Project, but would be anticipated to return to baseline levels once construction is completed. Impacts would be less than significant, and no mitigation would be required.

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

No Impact. Construction and operation of the proposed Project would not conflict with any local policies or ordinances protecting biological resources; therefore, there would be no impact and no mitigation would be required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant. The Proposed Lassen Substation would not be located within the boundaries of an adopted a HCP, NCCP, or other approved local, regional, or state habitat conservation plan for the Project area or its vicinity.

A portion of the transmission line upgrade, beginning midway between pole 12/48 and 13/48 and continuing north to Hatchery Lane, consists of natural and created wetlands, and non-wetland natural areas that were set aside as wetland mitigation (Theiss 1990). In 2000, this property was declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of that mitigation plan. The purpose of the wildlife preserve is to ensure that the protected area would be retained in its natural wetland and open space condition in perpetuity.

The Project is consistent with State and local applicable standards and guidelines. Additionally, implementation of Project APM''s would ensure Project related construction and operation impacts would be less than significant. Moreover, PacifiCorp would conduct all activities associated with the construction and operation of the substation and transmission/distribution line within the authorized limits of the ROW and in strict conformity with measures identified to reduce potential impacts of the Project. Replacement of the poles and reconductoring along the distribution lines would occur within PacifiCorp's existing ROW and easements.

PacifiCorp design standards require a ROW that is 50 feet wide for a 115 kV transmission line. The existing ROW for the 69 kV transmission line varies from 50 feet to 75 feet wide; therefore, the new 115 kV line into the proposed substation would not require new easements for the pole upgrade portion of the Project. Therefore, the proposed Project would not conflict with the Morgan-Merrill Wildlife Preserve and impacts would be less than significant.