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Appendix B
Biological Resources Technical Report

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BIOLOGICAL RESOURCES TECHNICAL REPORT

Form Energy Battery Project

Prepared for

California Energy Commission

Technical Support Provided by

Aspen environmental group

October 2023

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1. Introduction

This Biological Resources Technical Report (Report) provides a summary of the biological resources known or expected to occur at or near the Form Energy Battery Storage Project (Project) located in Mendocino County, California. The Project has been proposed as a collaboration between Form Energy, Inc (Form Energy) and Pacific Gas and Electric (PG&E).

This Report provides a review of the proposed Project in sufficient detail to determine how the Project may affect sensitive biological resources. For the purposes of this analysis, sensitive biological resources include:

- Listed as a threatened or endangered species under the federal Endangered Species Act (FESA)
- Listed or candidates for listing as a threatened or endangered species under the California Endangered Species Act (CESA)
- Bald and golden eagles protected under the Bald and Golden Eagle Protection Act (BGEPA)
- Species designated as Fully Protected (FP) by the California Department of Fish and Wildlife (CDFW)
- Animals designated as Species of Special Concern (SSC) by CDFW
- Animals included in the CDFW "Special Animals" (SA) list
- Plants assigned a California Rare Plant Rank (CRPR) of 1 or 2 by the California Native Plant Society (CNPS)
- Plants listed as rare under the California Native Plant Protection Act (CNPPA)
- Vegetation types designated as Sensitive Natural Communities by CDFW
- Features meeting the requirements of jurisdictional waters or wetlands of the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or CDFW

2. Proposed Project Location

The Project is located at 7475 and 7399 East Road in Redwood Valley in Mendocino County, California approximately 0.8 mile east of US Route 101 north (Redwood Highway) and approximately 1.2 miles north of the unincorporated community of Calpella, California (Figure B-1). The Project site is approximately 4.8 acres in size and situated within two parcels owned by PG&E (Figure B-2). The site is located on Mendocino County Assessor's Parcel Numbers (APN) 166-050-02-00 and 166-050-03-00, on the Redwood Valley and Ukiah U.S. Geological Survey (USGS) topographic map quadrangles (quad map). Throughout this report, the "proposed Project area" refers to the approximately 4.8-acre area described above. The "Survey Area" refers to the proposed Project area and a 300-foot buffer, totaling approximately 32.79 acres.

The proposed Project area primarily consists of heavily disturbed vacant fields that have been historically used for agricultural purposes. The site is adjacent to developed areas (PG&E substation and operations and maintenance yard) and includes the edge of an undeveloped densely vegetated hillside. Three human-made stormwater drainage ditches/swales are present in the vacant fields within the proposed Project area. Adjacent to the west and south portions of the site are rural residential homes and vineyards, to the north more rural residences and heavily disturbed vacant fields. The rural residential and vineyard parcels contain trees and shrubs planted for ornamental landscaping or windrows. The land immediately east of the site consists of undeveloped scrub and oak woodland. A small unmapped intermittent stream (Intermittent Stream-1) is located at the edge of a vineyard approximately 280 feet southeast of the proposed temporary laydown area and is tributary to a larger mapped intermittent stream (Intermittent Stream-2). Intermittent Stream-2 crosses through a vineyard approximately 325 feet southeast of the proposed Power Block 2 area. Except for an area immediately underneath overhead electrical lines, both intermittent streams contain tree and shrub dominated riparian habitat. Most of the proposed Project area is composed of non-native weedy, ruderal forbs and grasses, and is generally disturbed with open and gentle slopes (less than approximately 4 percent) from the northeast to the southwest. The elevation within the proposed Project area ranges from approximately 715 feet (ft) above mean sea level (amsl) to 745 ft amsl.

The proposed Project area is located within the Redwood Valley region of the Coast Ranges Geomorphic Province (CDC CGS 2002), and within the Central California Coastal major land resource area (MLRA) of Land Resource Region (LRR) C (USDA NRCS 2022). The region is far enough inland from the coast that oceanic effects are greatly diminished (PMC 2008). As recorded approximately seven miles south of the proposed Project area in Ukiah, the average annual low temperature is 46 degrees Fahrenheit (°F), and the average annual high is 72°F (U.S. Climate Data 2023). Precipitation in the region occurs mainly between October and April. The mean seasonal precipitation is approximately 39.93 inches (U.S. Climate Data 2023).

Access to the Project would occur from East Road via the PG&E substation access road located in between the two proposed power blocks.

2.1. Proposed Project Description

The proposed Project will consist of a commercial-scale demonstration of a new form of low-cost, long-duration energy storage; Form Energy's 100-hour, iron-air battery technology. This consists of a 5 megawatt (MW) battery storage facility with 500 megawatt hours (MWh) of Multiday Energy Storage (MDS). As shown in Figure B-3, Power Block 1 would be located on the northern parcel on approximately 1.69 acres. Power Block 2 would be installed in the southwest corner of the southern parcel on approximately 1.79 acres. A pad-mounted switchgear will be installed on the southern parcel (0.03 acre) and connected to each power block via a total of approximately 880 feet of trenching; having a temporary impact of 0.25 acre. A temporary laydown yard and construction parking area would also be located on the southern parcel on approximately 1.04 acres. The total area anticipated to be disturbed for the proposed Project, including extensions of the access roads, would be approximately 4.8 acres, of which about 3.5 acres would be permanent and 1.3 acres (the laydown and parking area) would be temporary. In addition, an acoustical sound wall will be added next to the Battery Enclosures to reduce operational noise at the nearest residences.

Figure B-1. Regional Location Map

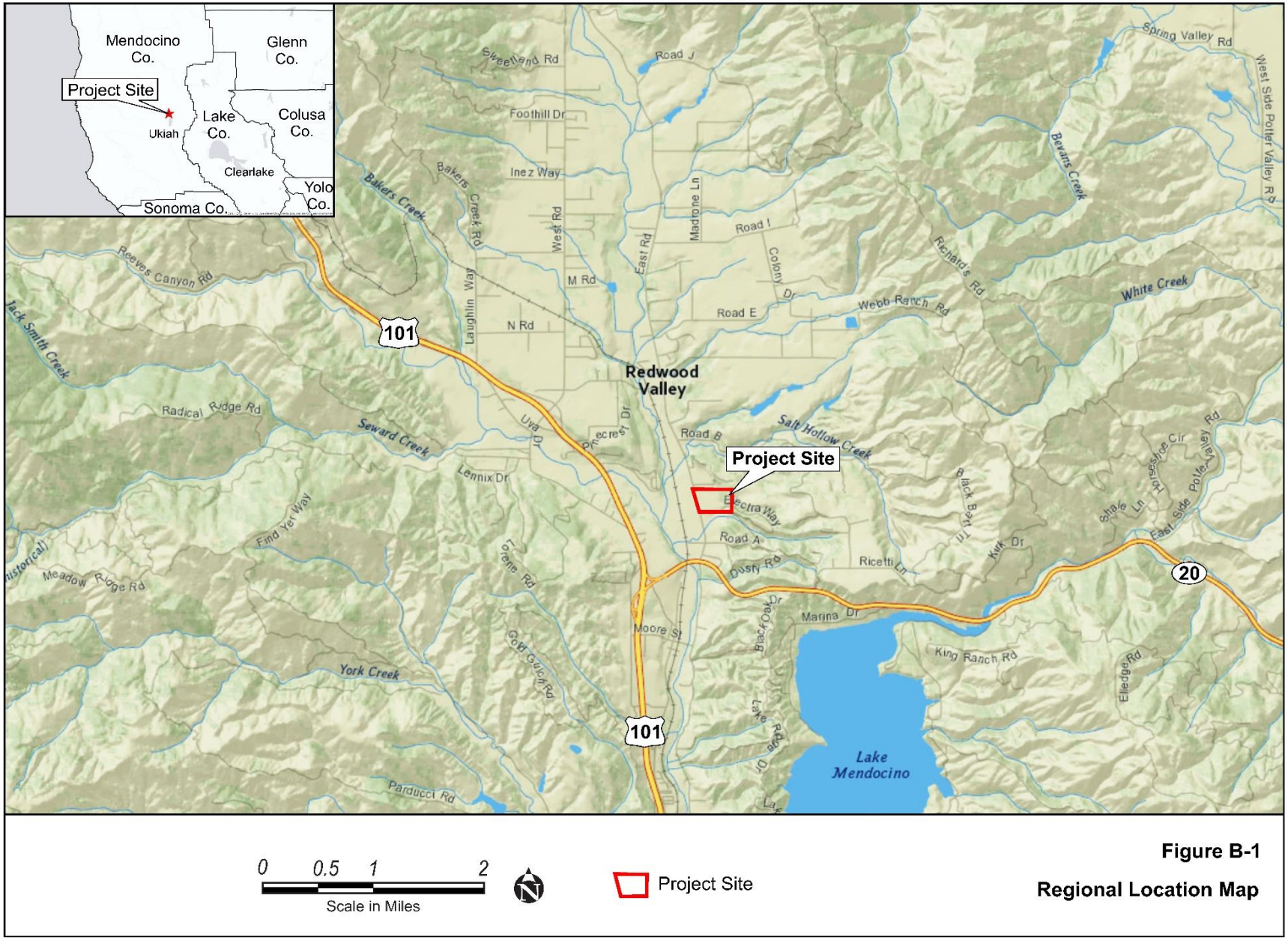


Figure B-2. Proposed Project area Location

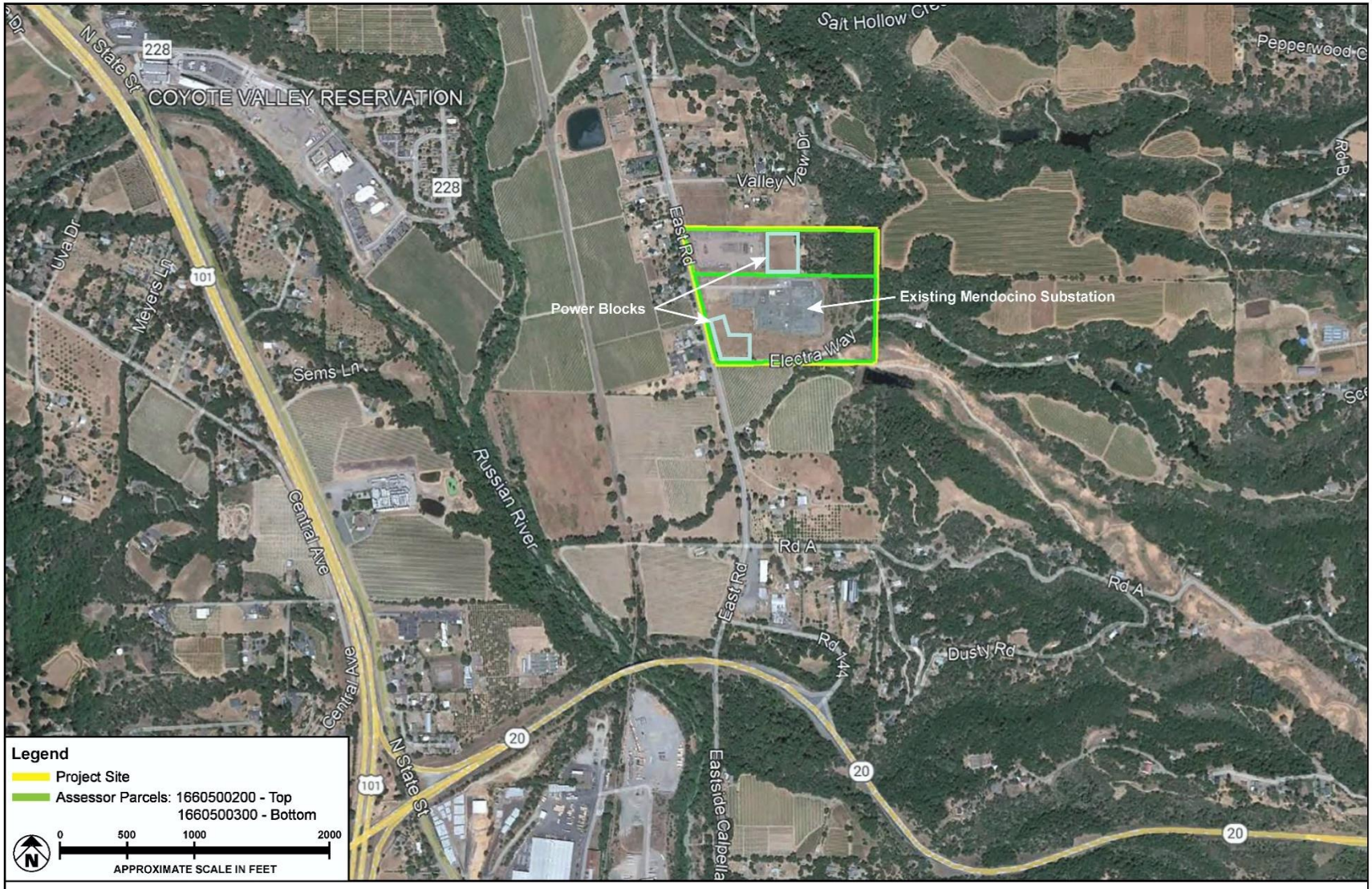
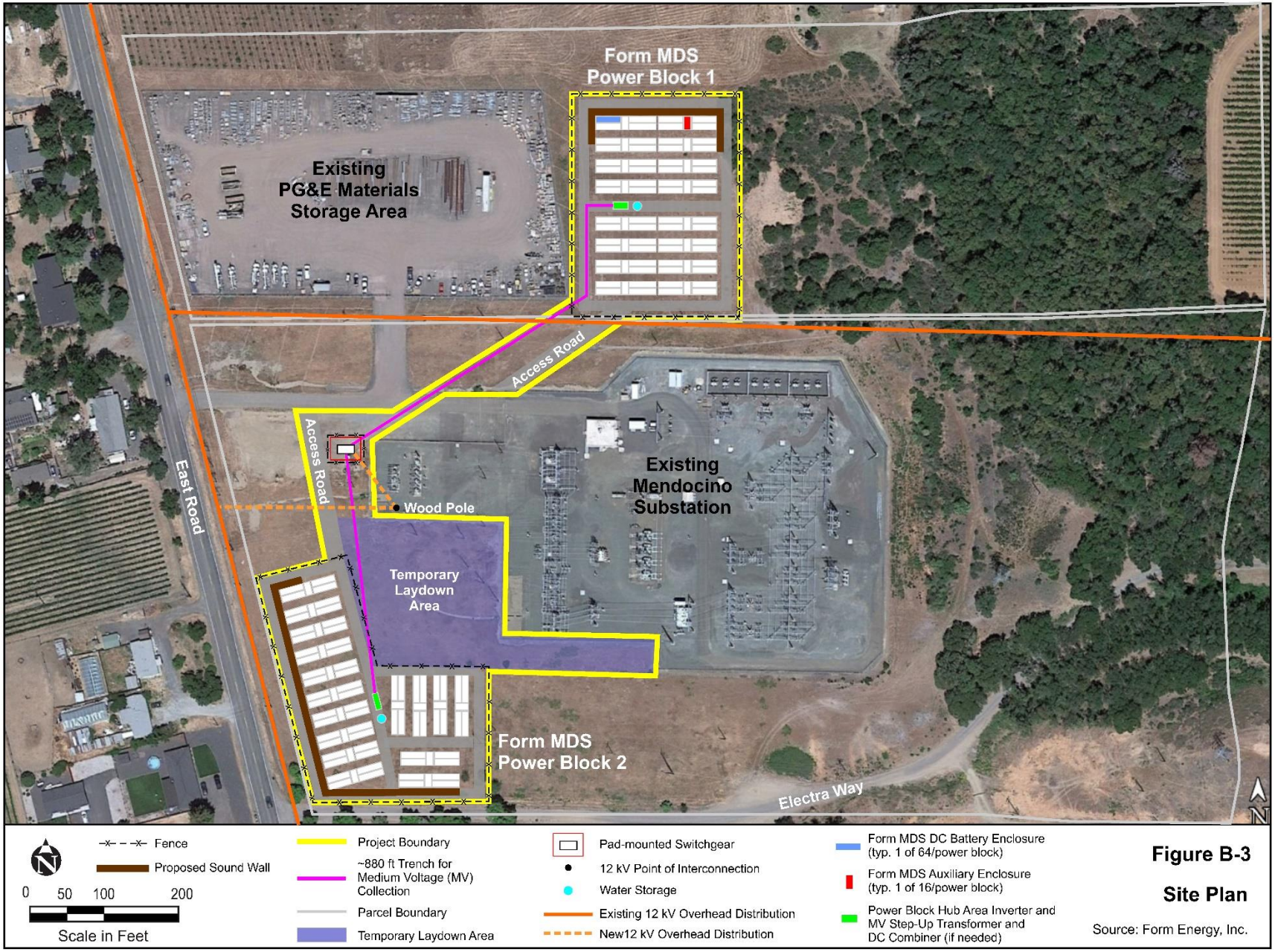


Figure B-2

Project Site

Source: Form Energy, Inc.

Figure B-3. Project Site Plan



3. Regulatory Framework

3.1. Federal Regulations

Endangered Species Act

The FESA and its subsequent amendments protect plants and wildlife (and their habitats) listed as endangered or threatened by the United States Fish and Wildlife Service (USFWS). Section 9 of the FESA specifically prohibits the taking of FESA-protected wildlife and lists prohibited actions. The FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). The FESA also governs the removal, possession, malicious damage, or destruction of endangered plants on federal land. Pursuant to the requirements of the FESA, an agency proposing a project or reviewing a proposed project within its jurisdiction (action agency) must determine whether any federally listed species may be present in the proposed Project area and determine whether the proposed Project will have a significant effect upon such species or its habitat.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations to protect migratory birds and their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized by regulation or permit. Regulations governing migratory bird permits are found in 50 CFR 13 – General Permit Procedures and 50 CFR 21 – Migratory Bird Permits.

Bald and Golden Eagle Protection Act

Bald and golden eagles are protected under the BGEPA, originally passed in 1940 and amended in 1962. The BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, transport, export, or import of any bald or golden eagle, alive or dead, including any part, nest, egg, unless allowed by permit (15 U.S.C. 668[a]; 50 CFR 22). The USFWS regulates activities that may take bald eagles or golden eagles. Take is defined as "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing" bald or golden eagles, and as activities causing: "(1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (USFWS 2007a).

Federal Clean Water Act Section 404

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the U.S." (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The U.S. Army Corps of Engineers (USACE) has adopted several revisions to their regulations in order to more clearly define "waters of the U.S." Until the beginning of 2001, "waters of the U.S." included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable "waters of the U.S."

In 2023, the USEPA updated the CWA and their definition of navigable waters (USEPA 2023). The Navigable Waters Protection Rule regulates the nation's navigable waters and the core tributary systems that provide perennial or intermittent flows into these systems. In the 2023 rule, consistent with the general framework of the 1986 regulations, the agencies interpret the term ''waters of the United States'' to include:

- Traditional navigable waters (TNW), the territorial seas, and interstate waters (''referred to as (a)(1) waters'').
- Impoundments of ''waters of the United States'' (''referred to as (a)(2) impoundments'').
- Tributaries to TNW, the territorial seas, interstate waters (referred to as (a)(3) waters, or paragraph (a)(2) impoundments when the tributaries meet either the relatively permanent standard or the significant nexus standard (''jurisdictional tributaries'').
- Wetlands adjacent to paragraph (a)(1) waters, wetlands adjacent to and with a continuous surface connection to relatively permanent paragraph (a)(2) impoundments; wetlands adjacent to tributaries that meet the relatively permanent standard; and wetlands adjacent to paragraph (a)(2) impoundments or jurisdictional tributaries when the wetlands meet the significant nexus standard (''jurisdictional adjacent wetlands'').
- Intrastate lakes and ponds, streams, or wetlands not identified in as (a)(1) through (4) waters that meet either the relatively permanent standard or the significant nexus standard (''see paragraph (a)(5) waters'' of the 2023 rule).

On-going Supreme Court cases may result in another USACE and USEPA revision to the definition of "waters of the U.S." in the coming months.

Federal Clean Water Act Section 401

Section 401 of the CWA requires that any applicant, for a federal permit for activities that involve a discharge to "waters of the state," shall provide the federal permitting agency a certification (from the state in which the discharge is proposed) that states that the discharge will comply with the applicable provisions under the CWA. Therefore, before the USACE may issue a Section 404 permit, a permittee must apply for and receive a Section 401 Water Quality Certification from the applicable Regional Water Quality Control Board (RWQCB). The RWQCB may add conditions to its certification to remove or mitigate potential impacts to water quality standards. Such conditions must ultimately be included in the federal Section 404 permit.

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.) requires authorization from USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States requires a Section 10 permit if the structure or the work affects the course, locations, or condition of the water body. This applies to any dredging or disposal of dredging materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States and applies to all structures.

3.2. State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires state agencies, local governments, and special districts to evaluate and disclose impacts from projects in the state. Section 15380 of the CEQA Guidelines clearly indicates that plant and wildlife species designated by the CDFW as FP or SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

California Endangered Species Act

The California Endangered Species Act (CESA) provides that certain species of plants and wildlife that are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of California are of statewide concern and should be conserved, protected, and enhanced along with their habitats. The CESA establishes policy that state agencies should not approve projects that would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives consistent with conserving the species or its habitat that would prevent jeopardy.

Fully Protected Designations

California Fish and Game Code (FGC) Sections 3511, 4700, 5050, and 5515 designate 36 fish and wildlife species as FP from take, including hunting, harvesting, and other activities. The FGC sections dealing with FP species state that these species "…may not be taken or possessed at any time and no provisions of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species." Most of the species on these lists have been subsequently listed under the FESA or CESA.

Native Bird Protections

FGC Sections 3503, 3503.3, and 3513 prohibit take, possession, or needless destruction of birds, nests, or eggs except as otherwise provided by the FGC. Section 3513 provides for the adoption of the MBTA's provisions (see Section 3.1).

Furbearing Mammal Protections

FGC Section 251.1 prohibits the harassment of any furbearing mammal. Harass is defined as an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding, or sheltering.

California Code of Regulations Title 14

Title 14 Cal. Code of Regulations § 460 states that fisher, marten, river otter, desert kit fox and red fox may not be taken at any time. Cal. Code Regs. Tit. 14, § 362 – Nelson Bighorn Sheep regulates the taking of Nelsons Bighorn Sheep.

California Native Plant Protection Act

The CNPPA of 1977 (FGC Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in California." The NPPA is administered by CDFW while the Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take.

California Streambed Alteration Notification/Agreement

Section 1602 of the FGC requires that a streambed alteration application be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flows or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all surface water and groundwater in California, including wetlands,

headwaters, and riparian areas (California Water Code Division 7). The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the state.

Oak Woodlands Preservation Act

California Public Resources Code §21083.4 states that if a County determines that a project in its jurisdiction may result in a conversion of oak woodland that would be considered significant under CEQA, then mitigation for this impact is required. The mitigation can include 1) conservation of oaks on the site; 2) replanting oaks (can be used for a maximum of 50 percent of the required mitigation); 3) contribution to the Oak Woodlands Conservation Fund; and/or 4) other mitigations developed by the County.

3.3. Local Regulations

The Survey Area is located in the interior region of the county, beyond the boundaries of the Mendocino County Coastal Zoning Code area. The Survey Area does not occur within the boundaries of the habitat conservation plans listed in Section 4.4 Biological Resources of the General Plan Update (Mendocino County 2008). Goals, policies, and action items specific to the County's General Plan to protect and preserve the County's natural habitat and wildlife are described in Chapter 4 Resource Management Element (Mendocino County 2008). Those policies that are important with respect to the proposed Project are as follows:

Policy RM-1. Protect stream corridors and associated riparian habitat.

- **Action Item RM-1.1.** Require adequate buffers for all projects potentially impacting stream corridors and/or their associated riparian habitats.

Policy RM-24. Protect the county's natural landscapes by restricting conversion and fragmentation of timberlands, oak woodlands, stream corridors, farmlands, and other natural environments.

Policy RM-25. Prevent fragmentation and loss of [the county's] oak woodlands, forests, and wildlands and preserve the economic and ecological values and benefits.

Policy RM-27. Conserve, restore and enhance natural resources, sensitive environments, and ecological integrity.

- **Action Item RM-27.1.** Identify and maintain wildlife movement corridors to support biodiversity and healthy natural processes.

Policy RM-28. All discretionary public and private projects that identify special-status species in a biological resources evaluation (where natural conditions of the site suggest the potential presence of special-status species) shall avoid impacts to special-status species and their habitat, to the maximum extent feasible. Where impacts cannot be avoided, projects shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) including, but not limited to, the following strategies:

- Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specifics of the species' needs.
- Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife.
- Provide protection for habitat and the known locations of special-status species through adequate buffering or other means.

- Provide replacement habitat of like quantity and quality on- or off-site for special-status species.
- Enhance existing special-status species habitat values through restoration and replanting of native plant species.
- Provision of temporary or permanent buffers of adequate size (based on the specifics of the special-status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.
- Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.
- **Action Item RM-28.1.** The County shall develop CEQA standards that require disclosure of impacts to all sensitive biotic communities during a review of discretionary projects. These standards shall require the following mitigation:
  - Sensitive Biotic Communities – For all sensitive biotic communities, restore or create habitat at a no net loss standard of habitat value lost. Where it is determined that restoration or creation are ecologically infeasible, preserve at a 2:1 ratio for habitat loss.
  - Oak Woodland – Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through the following measures:
    - To the maximum extent possible, preserve oak trees and other vegetation that occur near the heads of drainages or depressions to maintain the diversity of vegetation type and wildlife habitat as part of agricultural projects.
    - Comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals.
    - Provide appropriate replacement of lost oak woodlands or preservation at a 2:1 ratio for habitat loss.

Policy RM-29. All public and private discretionary projects shall avoid impacts to wetlands if feasible. If avoidance is not feasible, projects shall achieve no net loss of wetlands, consistent with state and federal regulations.

Policy RM-31. For the purposes of implementing this General Plan, the County defines “special status species” and “sensitive biotic communities” to include all species and habitats identified as such by the [CDFW, USFWS], or NOAA Fisheries.

4. Methods

This section provides a description of the methodologies used to locate and assess biological resources in the proposed Project area and Survey Area.

4.1. Literature Review

Prior to the site visit, a literature search was conducted to identify sensitive biological resources, including sensitive natural communities and special-status plants and wildlife species, known from the vicinity of the proposed Project area. The following sources were queried:

- CDFW California Natural Diversity Database (CNDDB) RareFind 6 Data (Nine Quad Summary Table) and Biogeographic Information and Observation System (BIOS) Viewer (Map), including the Spotted Owl Viewer (CDFW 2023b)
- USFWS Information for Planning and Consultation (IPaC) federal resource list (USFWS 2023a)
- California Native Plant Society (CNPS) Rare Plant Inventory species list (CNPS 2023b)
- Consortium of California Herbaria (CCH 2023)
- USFWS National Wetlands Inventory (NWI) Wetlands Mapper (USFWS 2023b)
- California Academy of Sciences and National Geographic Society – iNaturalist (iNaturalist 2023)
- The Cornell Lab of Ornithology eBird (eBird 2023)
- US Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Web Soil Survey (USDAC NRCS 2023a) and National Hydric Soil List (USDA NRCS 2023b)
- USGS National Geologic Map Database topoView (USGS 2023)
- Google Earth® aerial photographs

The CNDDB and Rare Plant Inventory query included the Redwood Valley quad where the proposed Project area is located plus the eight surrounding quads including Ukiah, Orrs Springs, Laughlin Range, Potter Valley, Cow Mountain, Willits, Foster Mtn., and Van Arsdale Reservoir. CNDDB unprocessed data points were reviewed within a five-mile radius of the Survey Area. The Consortium of California Herbaria, eBird, and iNaturalist query included the proposed Project area plus a five-mile buffer. The results of the CNDDB and IPaC searches can be found in Attachment B-2. The special-status species list in the Mendocino County General Plan was reviewed but the entire list was not incorporated into the literature review for the proposed Project as it included all of Mendocino County. The county is expansive, encompassing multiple different ecosystems which are not present within or near the proposed Project area, including redwood forests within the fog-belt, fresh and salt marsh, dunes and beaches, and the Pacific Ocean (Mendocino County 2008). The County's species list also drew primarily from CNDDB, CNPS, and USFWS species lists which were sources used to inform this study (Mendocino County 2008).

4.2. Field Site Visits

A reconnaissance-level biological survey was conducted on June 13, 2023. This survey focused on mapping vegetation within the proposed Project area, assessing the potential for the proposed Project area to support special-status species, searching for any special-status plants and wildlife, and identifying any potential jurisdictional wetlands or other waters. The site visit began at approximately 10:00 AM and ended at approximately 12:00 PM. The weather was sunny and clear with temperature ranging from 65°F to 72°F and a wind speed between 0 and 5 miles per hour (mph). The site visit began at the southeast corner of the proposed location of Power Block 1 and continued counterclockwise through the Power Block 1 site, then meandered to the southwest between the PG&E yard and substation to continue clock-wise through the temporary laydown yard and Power Block 2 sites. The site visit consisted of meandering

pedestrian transects within the Survey Area, scanning adjacent lands with binoculars where physical access was not permitted (i.e., PG&E substation and yard, adjacent private properties). Representative site photos are presented in Attachment B-1.

A supplemental site visit was conducted on July 19, 2023, to conduct an aquatic resources assessment of the human-made stormwater drainage ditches/swales and collect additional data on the characteristics of the woodland east of the proposed Project area. The site visit began at approximately 9:00 AM and ended at approximately 1:00 PM. Weather was sunny and slightly hazy with temperature ranging from 64°F to 95°F and a wind speed between 0 and 5 mph. The depths of the oak woodland located east of the proposed Project area were unable to be accessed due to the presence of a dense understory of poison oak (*Toxicodendron diversilobum*) and overall general density of trees, saplings, and shrubs preventing physical access. Intermittent Stream-1 was not surveyed as there were survey marker stakes present along the north side of the private road indicating the land to the south was not part of PG&E's parcel ownership. Intermittent Stream-2 was only observed at its crossing with East Road, a publicly accessible County Road, as the remaining reaches in the vicinity of the proposed Project are located on private lands.

During the field surveys, all plant and wildlife species observed were recorded in field notes and are listed in Attachment B-3.

4.3. Vegetation

Vegetation was classified using *A Manual of California Vegetation* (CNPS 2023a, Sawyer et al. 2009). Within each classification, the communities were also referenced to nomenclature used in Holland (1986). All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012), the Jepson eFlora (2020), Calflora online (2023), and other regional references. Figure B-4 presents the vegetation communities and land cover observed within the Survey Area.

4.4. Waters and Wetlands

The aquatic resources assessment of the human-made stormwater drainage ditches and swales was conducted using a combination of field survey with an Android phone integrated GPS receiver and desktop methods. A formal jurisdictional delineation using a sub-meter GPS was not conducted.

Federal Waters/Wetlands

Federally jurisdictional non-wetland "waters of the U.S." were delineated based on the limits of the ordinary high water mark (OHWM), as determined by changes in physical and biological features, such as bank erosion, vegetation, or debris wrack. This is consistent with methods described in the USACE Wetland Delineation Manual (1987) and the Arid West Supplements (2008a, 2008b). Data on the delineation of OHWM and the indicators observed were recorded on Arid West Ephemeral and Intermittent Streams OHWM Datasheets (Attachment B-5). Jurisdictional wetland waters of the U.S. were not present in the Survey Area.

The 2023 rule requires an assessment of waters and their connectivity to a traditional navigable water (TNW). In implementing the 2023 Rule, generally consider first if a water qualifies as a paragraph (a)(1) water (i.e., a TNW, the territorial seas, or an interstate water). If a waterbody is determined to be a paragraph (a)(1) water, then it is jurisdictional with no need for further evaluation. If a water is not a paragraph (a)(1) water, generally consider next whether any of the exclusions in paragraph (b) of the 2023 Rule apply to the water. The exclusions in the 2023 Rule do not apply to paragraph (a)(1) waters, and therefore, a traditional navigable water, the territorial seas, or an interstate water is not excluded under the 2023 Rule, even if the water would otherwise meet the criteria for an exclusion. If a water does not qualify as a paragraph (a)(1) water and an exclusion is applicable (e.g., waters that meet the waste

treatment system exclusion, wetlands that qualify as prior converted cropland, etc.), the water would not be jurisdictional under the 2023 Rule. If the water is not a paragraph (a)(1) water, and an exclusion under paragraph (b) does not apply, then generally determine next if the water can be assessed under paragraphs (a)(2) through (4) of the 2023 Rule.

As determined in the process described above, segments of two of the observed stormwater drainage ditch/swale features (Drainage-1b and Drainage-2a, Figure B-5) could be defined as a paragraph (a)(3) jurisdictional tributaries due to there being a significant nexus to Intermittent Stream-2, a paragraph (a)(3) jurisdictional tributary to the Russian River. The Russian River is a paragraph (a)(3) jurisdictional tributary to the Pacific Ocean.

State Wetlands/Waters

The waters of the state are generally delineated based on the limits of the OHWM as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetative characteristics. Waters of the state observed within the Survey Area included the limits of waters of the U.S described previously in addition to hydrologically isolated segments (Drainage-1c, Drainage-2b, and Drainage-3).

The SWRCB issued the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), which went into effect in May 2020 and were revised in April 2021 (SWRCB 2021). These procedures expanded the definition of wetlands to include areas that may not meet the definition of a wetland based on the USACE Wetland Delineation Manual and Regional Supplements. Areas that may be included as wetlands per the State Procedures include areas that are unvegetated but otherwise meet the criteria of federal wetlands, any natural wetlands, wetlands created by a modification to waters of the state, and wetlands that have formed because of historic human activity. Jurisdictional wetland waters of the state outside of the limits of waters of the U.S. were not present in the Survey Area.

CDFW Jurisdictional Waters

CDFW jurisdiction was delineated to the top of the banks of the channel and/or to the edge of the riparian canopy/riparian habitat where the trees and vegetation are rooted within the bank. For all features present in the Survey Area, the CDFW jurisdictional boundary is concurrent with the OHWM.

5. Results

5.1. Vegetation

The proposed Project area contains two vegetation alliances best described as *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance (wild oats – annual brome grassland) and *Quercus wislizeni* – *Quercus parvula* Forest and Woodland Alliance (interior live oak – shreve oak woodland and forest).

Power Block 1 is dominated by tall forbs and grasses with a dense shrub area located at the northeast corner near the base of the hillside. The PG&E yard is located immediately west of the site and, to the north are rural residential homes/properties, to the east is undeveloped scrub and woodland, and to the south is the PG&E substation and access road. The access roads to Power Block 1 and Power Block 2, the Power Block 2 area, the pad-mounted switchgear area, and temporary laydown yard were recently mowed and most vegetation was unidentifiable due to a lack of flowers, fruiting bodies, or other diagnostic characters. However, based on an inspection of the remaining vegetation, and a review of Google Earth aerial and street view imagery, it appears the species composition is similar to what was observed in the Power Block 1 site.

The wild oat and annual brome grassland within the proposed Power Block 1 area contained vegetation up to approximately four feet in height; whereas, the remaining proposed Project area contained vegetation approximately six inches high or shorter. A review of Google Earth aerial imagery dating back to 1993 suggests these areas are regularly maintained through mowing, likely for weed and fire abatement. Additionally, the area immediately adjacent to the south side of the substation access road, west of the substation, appears it has been periodically disturbed by staging of equipment and vehicles over at least the past 30 years. Google Earth aerial imagery from February 2020 and May 2021 show that the area where the PG&E yard and proposed Power Block 1 are located were converted from orchard land cover to their current states. The historic Google Earth aerial imagery also suggests that the interior live oak woodland present immediately adjacent to proposed Power Block 1 has also experienced anthropogenic disturbance in the form of off-highway vehicle (OHV) periodically since 2018.

The riparian corridor associated with Intermittent Stream-1, which occurs within the southeast corner of the Survey Area but outside of the proposed Project area, can best be described as *Quercus lobata* Riparian Forest and Woodland Alliance (valley oak riparian forest and woodland), which is recognized by CDFW as an S3 Sensitive Natural Community. CDFW evaluates Natural Communities using the Heritage Methodology, the same system used to assign global and state rarity ranks for plant and animal species in the CNDDB. Natural communities with ranks of S1 (Critically Imperiled), S2 (Imperiled), or S3 (Vulnerable) are considered Sensitive Natural Communities and should be addressed in the CEQA environmental review process (CDFW 2023b). No other Sensitive Natural Communities were identified within the Survey Area during the literature review or field surveys. However, Intermittent Stream-1 is a tributary to the somewhat larger Intermittent Stream-2, which supports similar riparian vegetation and connects to Intermittent Stream-1 immediately adjacent to the southeast edge of the Survey Area.

Vegetation community types within the Survey Area are described in further detail below. The acreages of vegetation types and cover areas are shown below in Table B-1 and Figure B-4.

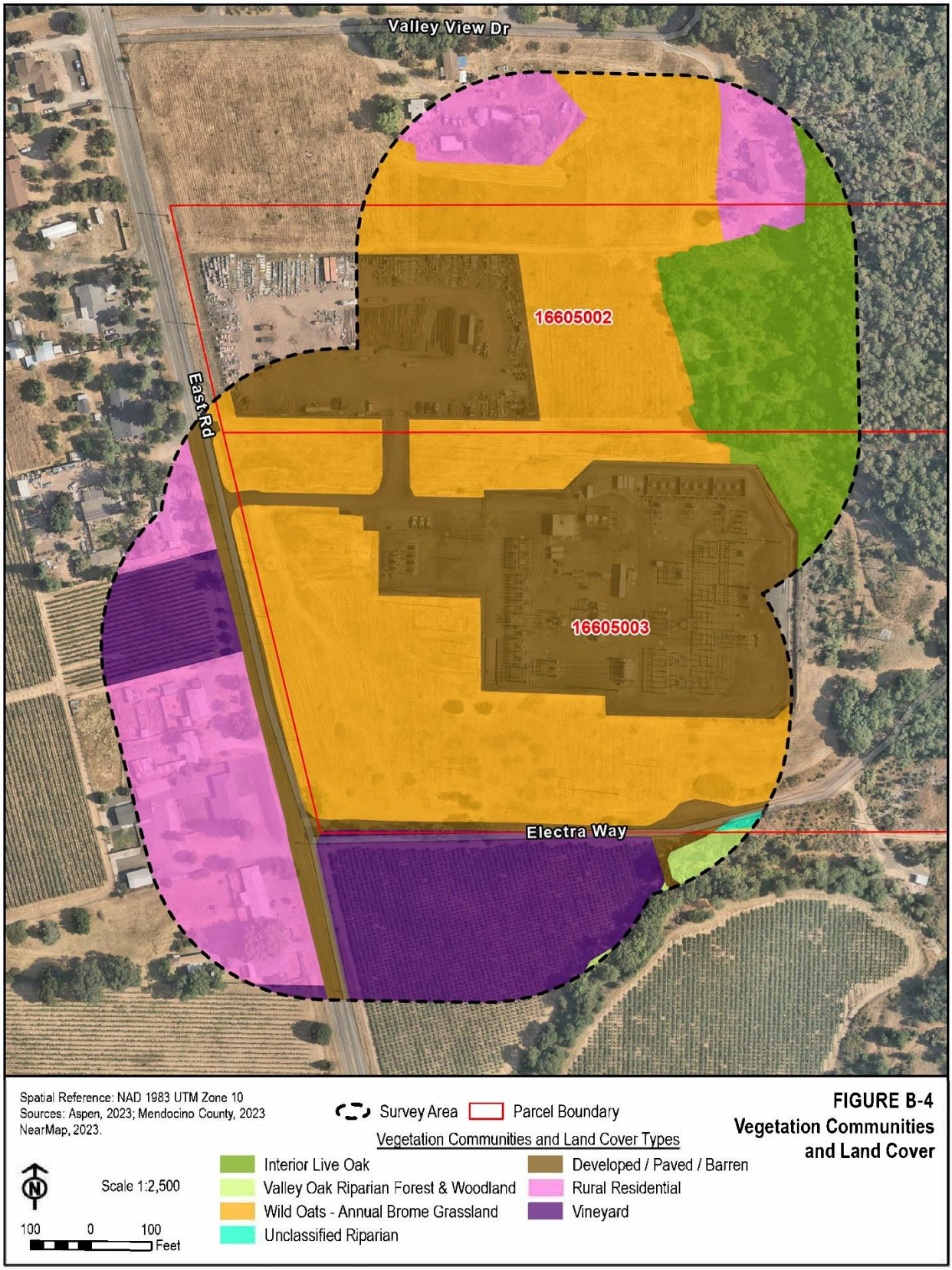
Table B-1. Summary of Vegetation and Cover Types in the Survey Area

Vegetation and Land Cover Types	Type	Total Acres	Percentage of Total Acres (%)
Vegetation Community Types			
Wild Oats – Annual Brome Grassland	Upland	12.01	37%
Interior Live Oak – Shreve Oak Woodland and Forest	Upland	3.05	9%

Vegetation and Land Cover Types	Type	Total Acres	Percentage of Total Acres (%)
Valley Oak Riparian Forest and Woodland	Riparian	0.16	<1%
Unknown Riparian	Riparian	0.03	<1%
Other Cover Types*			
Developed / Paved / Barren	N/A	8.96	27%
Rural Residential	N/A	4.55	14%
Vineyard	N/A	4.03	12%
Total:		32.79	100%

*These communities/land cover types are not defined in Sawyer et al. (2009) or Holland (1986) but are included in this table for acreage calculation purposes.

Figure B-4. Vegetation Communities and Land Cover



Wild Oats – Annual Brome Grassland (*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance). This vegetation is characterized by the presence of wild oats *(Avena fatua)* and softchess *(Bromus hordeaceus)* which dominates the Survey Area. Other species such as silver hairgrass *(Aira caryophyllea)*, bur chervil *(Anthriscus caucalis)*, rattlesnake grass *(Briza maxima)*, ripgut brome *(B. diandrus)*, field bindweed *(Convolvulus arvensis)*, and medusa head *(Elymus caput-medusae)* are also present in smaller amounts. There are a few scattered isolated trees/shrubs, either mature or saplings, also present within the areas characterized by grassland. Within the proposed Power Block 1 site these include small/short coyote brush *(Baccharis pilularis)*, poison oak, and cultivated grape *(Vitis vinifera)*. A single, approximately 12 feet tall, northern catalpa *(Catalpa speciosa)* tree was observed within the proposed Power Block 1 access road site, with four approximately 20 to 50 feet tall trees observed adjacent to the southwest corner of the proposed Power Block 2 site. Two approximately 20 feet tall northern California black walnut *(Juglans hindsii)* shrubs were observed within the boundary of the proposed temporary laydown yard site. A cluster of three valley oak *(Quercus lobata)* trees, approximately 15 to 30 feet tall, were observed at the southeast corner of the site, two of which are within the boundary of the Power Block 2 site. Although two northern California black walnuts and three valley oaks are present within the wild oat and annual brome grassland on the proposed Project area, the density of the trees does not meet the criteria to be mapped or classified as Hind's walnut and related stands or valley oak woodland sensitive natural communities, respectively. Wild oats and annual brome grassland is not considered a Sensitive Natural Community in California (CDFW 2023b). This community is equivalent to non-native grassland and valley and foothill grassland habitat types as classified by Holland (1986), and annual grassland as classified by the California Wildlife Habitat Relationships System (CDFW 2022).

Interior Live Oak – Shrieve Oak Woodland and Forest (*Quercus wislizeni* – *Quercus parvula* Forest and Woodland Alliance). Several successional stages of this vegetation community are present within the Survey Area, including early mid to late community successional stages. The dominant species present are interior live oak (*Quercus wislizeni*), madrone (*Arbutus menziesii*), black oak (*Q. kelloggii*), coyote brush (*Baccharis pilularis*), and poison oak. Although part of the formal alliance name, shrieve oak (*Quercus parvula*) was not observed within the Survey Area. The base of the hillside immediately adjacent to the east of proposed Power Block 1 and adjacent to the east of the substation can best be described as early- to mid-successional stages. The hillside adjacent to proposed Power Block 1 is characterized by mature shrubs and trees shorter than 30 feet with scattered openings in the canopy. The dominant species in this area include coyote brush, interior live oak, black oak, madrone, and poison oak. Other species present include whiteleaf manzanita (*Arctostaphylos viscida*), toyon (*Heteromeles arbutifolia*), California wild grape, Klamathweed *(Hypericum perforatum)*, common sheep sorrel *(Rumex acetosella)*, and Himalayan blackberry *(Rubus armeniacus)*. The hillside adjacent to the substation is characterized by mature shrubs and trees shorter than 25 feet with a very open canopy dominated by yerba santa (*Eriodictyon californicum*), elderberry (*Sambucus mexicana*), and coyote brush. Most of the yerba santa in this area appeared to have been killed at some point prior to the survey, possibly by herbicide. Further upslope the woodland transitions into a mid-late to late community successional stage characterized by a dense upper story and understory canopy dominated by interior live oak, madrone, black oak, and poison oak. Interior live oak – shrieve oak woodland and forest is not considered a Sensitive Natural Community in California (CDFW 2023b). This community is equivalent to interior live oak woodland/forest habitat types as classified by Holland (1986) and montane hardwood as classified by the California Wildlife Habitat Relationships System (CDFW 2022).

Valley Oak Riparian Forest and Woodland (*Quercus lobata* Riparian Forest and Woodland Alliance)

This vegetation is characterized by a moderately dense overstory of valley oak, interior live oak, and black oak, with a moderately dense understory of shrubs including willows (*Salix* sp.) and Himalayan blackberry along the banks throughout much of the channel. Valley Oak Riparian Forest and Woodland is considered an S3 ranked Sensitive Natural Community in California (CDFW 2023b). This community is equivalent to

Great Valley-valley oak riparian forest habitat type as classified by Holland (1986) and valley oak woodland as classified by the California Wildlife Habitat Relationships System (CDFW 2022).

5.2. Special-Status Species

Plants or wildlife may be ranked as special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. These include listed species that have been formally designated as federally endangered or threatened by USFWS, pursuant to the FESA or as state endangered, threatened, or rare (for plants only) by CDFW pursuant to the CESA or the NPPA. CDFW FP species are considered rare or facing possible extinction and receive additional protection under Sections 3511, 4700, 5050, or 5515 of the California FGC while Species of Special Concern are those species, subspecies, or distinct populations of an animal native to California that are considered for protection by CDFW for a variety of reasons, such as population declines or range restrictions. "Special Animals" is a broad term used to refer to all the animal taxa tracked by the CNDDB, regardless of their legal or protection status. The Special Animals list includes taxa that are biologically rare, very restricted in distribution, or declining throughout their range, but not currently threatened with extirpation. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g., Audubon Society, The Wildlife Society, etc.), and the scientific community.

Table B-2 below includes species that were identified during the literature search but are not expected to be present because of a lack of suitable habitat within the proposed Project area, distance to geographic or elevation range of the species, or other notes as provided below. These species are not addressed further in this report. Attachment B-4 includes a more detailed evaluation of each species.

Table B-2. Special-Status Species Not Likely to Occur in the Survey Area

Latin Name	Common Name	Reason for Exclusion
PLANTS		
Alisma gramineum	Grass alisma	Well outside the species' elevation range.
Allium peninsulare var. *franciscanum*	Franciscan onion	Well outside of species' geographic range.
Arctostaphylos stanfordiana ssp. *raichei*	Raiche's manzanita	Well outside the species' elevation range.
Astragalus breweri	Brewer's milkvetch	No suitable meadow habitat or serpentine soils.
Blennosperma bakeri	Sonoma sunshine	No suitable soils to support suitable vernal pool/swale habitat.
Brasenia schreberi	Watershield	No suitable aquatic habitat with perennial surface water.
Bruchia bolanderi	Bolander's bruchia	Well outside the species' elevation range.
Carex comosa	Bristly sedge	No suitable marshy/swampy lake margin habitat.
Ceanothus gloriosus var. *exaltatus*	Glory brush	Well outside of species' geographic range.
Ceanothus pinetorum	Kern ceanothus	Well outside the species' elevation range.
Cryptantha excavata	Deep scarred cryptantha	Well outside of species' geographic range.
Cuscuta jepsonii	Jepson's dodder	Well outside the species' elevation range.
Cypripedium californicum	California lady's-slipper	Well outside of species' geographic range.
Erythranthe nudata	Bare monkeyflower	No suitable seep habitat or serpentine soils/outcrops.
Fritillaria agrestis	Stinkbells	No suitable clay or serpentine soils.

Latin Name	Common Name	Reason for Exclusion
Fritillaria purdyi	Purdy's fritillary	No suitable serpentine soils.
Fritillaria roderickii	Roderick's fritillary	Well outside of species' geographic range.
Gilia capitata ssp. *pacifica*	Pacific gilia	Well outside of species' geographic range.
Grimmia torenii	Toren's grimmia	Well outside the species' elevation range.
Hemizonia congesta ssp. *calyculata*	Mendocino tarplant	No suitable clay or serpentine soils.
Hemizonia congesta ssp. *tracyi*	Tracy's tarplant	Well outside of species' geographic range.
Hesperolinon adenophyllum	Glandular western flax	No suitable serpentine soils.
Horkelia bolanderi	Bolander's horkelia	Well outside the species' elevation range.
Lasthenia burkei	Burke's goldfields	No suitable soils to support suitable vernal pool/swale habitat; no suitable meadow or seep habitat.
Lasthenia conjugens	Contra Costa goldfields	Well outside of species' geographic range.
Layia septentrionalis	Colusa layia	Well outside of species' geographic range.
Leptosiphon grandiflorus	Large-flowered leptorsiphon	Well outside of species' geographic range.
Lilium rubescens	Redwood lily	No suitable chaparral, broad-leaf or conifer forest habitat.
Limnanthes bakeri	Baker's meadowfoam	No suitable soils to support suitable vernal pool/swale habitat; no suitable meadow or marsh habitat.
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	No suitable soils to support suitable vernal pool/swale habitat; no suitable meadow habitat.
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	No suitable soils to support suitable vernal pool/swale habitat.
Piperia candida	White-flowered rein orchid	No suitable broad-leaf or conifer forest habitat.
Plagiobothrys lithocaryus	Mayacamas popcornflower	CNPS presumes species to be extinct in California. Outside of species' elevation and geographic range.
Pleuropogon californicus var. *davyi*	Davy's semaphore grass	No suitable soils to support suitable vernal pool/swale habitat; no suitable slough or meadow habitat.
Pleuropogon hooverianus	North Coast semaphore grass	No suitable soils to support suitable vernal pool/swale habitat; no suitable meadow habitat.
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	Well outside the species' elevation range.
Ramalina thrausta	Angel's hair lichen	Well outside of species' geographic range.
Ranunculus lobbii	Lobb's aquatic buttercup	No suitable soils to support suitable vernal pool/swale habitat.
Silene bolanderi	Bolander's catchfly	Well outside the species' and geographic elevation range.
Streptanthus glandulosus ssp. *hoffmanii*	Hoffman's bristly jewelflower	Well outside of species' geographic range.
Trifolium amoenum	Showy Indian Clover	Well outside of species' geographic range.
Trifolium buckwestiorum	Santa Cruz clover	Well outside of species' geographic range.

Latin Name	Common Name	Reason for Exclusion
Trifolium hydrophilum	Saline clover	Well outside of species' geographic range.
Usnea longissima	Methuselah's beard lichen	Well outside of species' geographic range.
Wyethia longicaulis	Humboldt County wyethia	Well outside the species' elevation range.
INVERTEBRATES		
Gonidea angulate	Western ridged mussel	No suitable perennial stream, river, or lake habitat.
FISH		
Entosphenus tridentatus	Pacific lamprey	No suitable spawning or dispersal aquatic habitat.
Hysterocarpus traskii lagunae	Clear Lake tule perch	Well outside of species' geographic range.
Mylopharadon conocephalus	Hardhead	No suitable perennial aquatic habitat.
Oncorhynchus mykiss irideus	Steelhead – Northern California distinct population segment (DPS) summer run	Well outside of species' geographic range.
Oncorhynchus tshawytscha	Chinook salmon – California coastal Evolutionarily Significant Unit (ESU)	No spawning aquatic habitat of suitable size.
AMPHIBIANS		
Dicamptodon ensatus	California giant salamander	Well outside of species' geographic range.
Taricha rivularis	Red-bellied newt	No suitable perennial stream habitat.
BIRDS		
Accipiter gentilis	Northern goshawk	No suitable forest habitat for nesting or foraging.
Agelaius tricolor	Tricolored blackbird	Well outside of species' geographic range.
Aquila chrysaetos	Golden eagle	No suitable steep terrain nesting habitat, too developed to support foraging.
Branta hutchinsii leucopareia	Cackling goose	Well outside of species' geographic range for both breeding and wintering.
Buteo swainsoni	Swainson's hawk	Well outside of species' geographic range for both breeding and wintering.
Chaetura vauxi	Vaux's swift	No suitable coniferous or mixed coniferous forests for nesting; no suitable aquatic habitat for foraging.
Charadrius nivosus nivosus	Western snowy plover.	Well outside of species' geographic range for both breeding and wintering.
Coccyzus americanus	Yellow-billed cuckoo	Well outside of species' geographic range for both breeding and wintering.
Contopus cooperi	Olive-sided flycatcher	No suitable coniferous forest habitat for nesting or foraging.
Cypseloides niger	Black swift	Well outside of species' geographic range for both breeding and wintering; proposed Project area located on migratory route.
Haliaeetus leucocephalus	Bald eagle	No suitable nesting trees or aquatic foraging habitat.
Nannopterum auritum	Double-crested cormorant	No suitable aquatic habitat for nesting or foraging.

Latin Name	Common Name	Reason for Exclusion
MAMMALS		
Arborimus pomo	Sonoma tree vole	No suitable old growth Douglas-fir, redwood, or montane hardwood-conifer forest habitat.
Martes caurina humboldtensis	Humboldt marten	No suitable conifer forest habitat.

Table B-3 below includes species that were identified during the literature search with potential to occur within the Survey Area. Attachment B-4 provides the detailed assessment for each species and summarizes geographic range and habitat for all special-status species with a potential to occur in the Survey Area. Each of these species was assessed for potential to occur within the Survey Area based on the following criteria:

- **Present**: Species (or sign) was observed in the Survey Area during recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Habitat (including soils) for the species occurs in the Survey Area and a known occurrence occurs within five miles within the past 20 years; however, the species was not detected during recent surveys.
- **Moderate**: Habitat (including soils) for the species occurs in the Survey Area and a known regional record has been documented, but not within five miles of the proposed Project area or within the past 20 years; or there is a documented occurrence within five miles of the Survey Area within the past 20 years and marginal or limited habitat occurs on site; or the species' range includes the geographic area and suitable habitat exists in the Survey Area.
- **Low**: Limited habitat for the species occurs in the Survey Area and the species' range includes the geographic area, but there are no documented occurrences within five miles of the Survey Area within the past 20 years.
- **Not Likely to Occur**: Species or signs not observed in the Survey Area, the Survey Area is outside of the species' known range, and conditions in the Survey Area are not suitable for occurrence.

Habitat conditions include soil type, vegetation, and other factors relevant to each species. The criteria are general guidelines and a species' potential for occurrence may be modified based on biological analysis of habitat quality, isolation, and other factors. In this context, species refers to a taxonomic entity and can include recognized subspecies, population segments, or other genetically or geographically distinct units.

Table B-3. Special-Status Species with a Potential to be Present in the Survey Area

		Conservation Status	Occurrence Potential
PLANTS			
Cypripedium montanum	Mountain lady's-slipper	4.2 / S4	Low
Leptosiphon aureus	Bristly leptosiphon	4.2 / S4	Low
Leptosiphon latisectus	Broad-lobed leptosiphon	4.3 / S4	Low
Malacothamnus mendocinensis	Mendocino bush-mallow	1B.1 / S1	Low
Tracyina rostrata	Beaked tracyina	1B.2 / S2	Low
Trichodon cylindricus	Cylindrical trichodon	2B.2 / S2	Low
Danaus plexippus plexippus	Monarch butterfly	FC / S2	Low
Bombus caliginosus	Obscure bumble bee	S1S2	Moderate
Bombus occidentalis	Western bumble bee	SC / S1	Moderate

Noyo intersessa	Ten-mile shoulderband	S1S2	Moderate
FISH			
Oncorhynchus kisutch	Coho salmon – Central California Coast ESU	FE / SE / S2	Low
Oncorhynchus mykiss irideus	Steelhead – Central California Coast DPS	FT / S3	Low
AMPHIBIANS			
Rana boylii	Foothill yellow-legged frog – North Coast DPS	SSC / S4	Low
Taricha torosa	Coast Range newt	SSC / S4	Moderate
REPTILES			
Emys (=Actinemys) marmorata	Western pond turtle	SSC / S3	Moderate
Accipiter cooperi	Cooper's hawk	WL / S4	High (nesting, foraging)
Accipiter striatus	Sharp-shinned hawk	WL / S4	Moderate (nesting, foraging)
Ardea alba	Great egret	S4	Moderate (nesting, foraging)
Ardea herodias	Great blue heron	S4	Moderate (nesting, foraging)
Athene cunicularia	Burrowing owl	SSC / BCC / S2	Low (nesting, foraging)
Buteo regalis	Ferruginous hawk	WL / S3S4	Not likely to occur (nesting) Moderate (foraging)
Circus hudsonius	Northern harrier	SSC / BCC / S3	Not likely to occur (nesting) High (foraging)
Elanus leucurus	White-tailed kite	FP / S3S4	High (nesting, foraging)
Falco columbarius	Merlin	WL / S3S4	Not likely to occur (nesting) Moderate (foraging)
Falco peregrinus anatum	American peregrine falcon	FD / SD / FP / BCC / S3S4	Not likely to occur (nesting) High (foraging)
Icteria virens	Yellow-breasted chat	SSC / S4	Low (nesting, foraging)
Pandion haliaetus	Osprey	WL / S4	Low (nesting) Not likely to occur (foraging)

Latin Name	Common Name	Conservation Status	Occurrence Potential
Setophaga petachia	Yellow warbler	SSC / S3	Low (nesting, foraging)
Sphyrapicus ruber	Red-breasted sapsucker	S4	Low (nesting, foraging)
Strix occidentalis caurina	Northern spotted owl	FT / ST / S2	Low (nesting) Moderate (foraging)
MAMMALS			
Antrozous pallidus	Pallid bat	SSC / S3	Moderate (day/maternity roost, foraging)
Bassariscus astutus	Ringtail	FP	Low
Corynorhinus townsendii	Townsend's big-eared bat	SSC / S2	Low (day/maternity roost, foraging)
Pekania pennanti	Fisher	SSC / S2S3	Low
Taxidea taxus	American badger	SSC / S3	Low

STATUS CODES:

FE Federally Endangered
FT Federally Threatened
FC Federal Candidate
FD Federally Delisted
SE State Endangered
ST State Threatened
SC State Candidate
SD State Delisted
SR State rare plant
SSC California Species of Special Concern
FP CDFW Fully Protected
WL CDFW Watch List

CNPS California Native Plant Society Listing
1A Plants presumed extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3 Plants about which we need more information – a review list
4 Plants of limited distribution – a watch list
.1 Seriously threatened in California (high degree/immediacy of threat)
.2 Fairly threatened in California (moderate degree/immediacy of threat)
.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)

BCC Birds of Conservation Concern: USFWS-designated migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities and draw attention to species in need of conservation action.

STATE RANKING The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

SX Presumed Extirpated – Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
S1 Critically Imperiled—Critically imperiled in the state because of extreme rarity (often five or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

5.2.1. Special-Status Plants

No special-status plant species were observed during the field surveys; however, six special-status species with a very low potential to occur were identified during the literature review (see Table B-3, above). Although field surveys were conducted towards the end of the typical blooming period for many of the special-status plant species known from the region, the potential to occur is extremely low due to the level of habitat degradation within the proposed Project area from ongoing disturbance. Therefore, these species are not addressed further in this report. Attachment B-4 includes a more detailed evaluation of each species.

5.2.2. Special-Status Wildlife

No special-status wildlife species were observed or detected during the field surveys; however, 27 special-status wildlife species, including four invertebrates, two fish, two amphibians, one reptile, 15 birds, and five mammals, were identified during the literature review (see Table B-3 above). Of these, 16 were determined to have a moderate to high potential to occur within or near the Survey Area. The paragraphs below provide additional information about the special-status wildlife species with a moderate to high potential to occur. Attachment B-4 includes a more detailed evaluation of each species with a low potential to be present.

Obscure bumble bee (*Bombus caliginosus*). Obscure bumble bee has an S1S2 State Rank indicating that its existence within California is imperiled to critically imperiled. This bumble bee species is uncommon throughout its range in Mediterranean California and the Pacific Coast from southern British Columbia south to southern California with scattered records from the east side of the Central Valley (Hatfield et al. 2015). The Survey Area is within what is currently understood to be part of the historic range from which the species is thought to be extirpated. The obscure bumble bee inhabits grassy coastal prairies and Coast Range meadows and nests both underground and above ground in abandoned bird nests. This bumble bee species feeds on the nectar and pollen of plant genera including, but not limited to: *Arctostaphylos*, *Ceanothus*, *Cirsium*, *Clarkia*, *Keckiella*, *Lathyrus*, *Lotus*, *Lupinus*, *Marah*, *Phacelia*, *Rhododendron*, *Rubus*, *Trifolium*, and *Vaccinium* (Bumble Bee Watch 2023, Hatfield et al. 2015).

There are no database records for obscure bumble bee within five miles, the nearest being a 1954 record located approximately 18 miles northwest of the Survey Area (CNDDB 2023b). The proposed Project area provides somewhat marginal habitat that could potentially support obscure bumble bee, and was observed to provide at least floral food sources for a bumble bee observed during the June site visit. A bumble bee identified to possibly be a yellow-faced bumble bee (*B. vosnesenskii*) was observed foraging in the Klamath weed growing along the edge of the grassland and woodland adjacent to the proposed Power Block 1. Obscure bumble bee co-occurs with the yellow-faced bumble bee and is known to appear very similar in the field (Xerces Society 2023). The grassland is heavily disturbed, and it is unknown what the abundance within the Survey Area is of appropriate floral resources for obscure bumble bee. Himalayan blackberry (*Rubus armeniacus*) and whiteleaf manzanita (*Arctostaphylos viscida*), species within genera listed above known to be floral resources for this species, were observed in the interior live oak woodland. Botta's pocket gopher mounds and burrow holes that obscure bumble bee could use for nesting were also observed within the proposed Project area. Therefore, there is a moderate potential for obscure bumble bee to occur within the Survey Area.

Western bumble bee (*Bombus occidentalis*). Western bumble bee is a state candidate for endangered listing under the CESA and has an S1 State Rank indicating its existence within California is critically imperiled. Historically this species ranged from the Pacific coast to the Colorado Rocky Mountains, but severe population decline has been recorded west of the Sierra-Cascade Crest (Jepson et al. 2014). It's currently thought that this species' range is likely restricted to high elevation sites in the Sierra Nevada with few scattered observations along the California coast (CDFW 2019, Xerces Society 2018). The western bumble bee has three basic habitat requirements: suitable nesting sites for the colonies, nectar and pollen from floral resources available throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for the queens (Jepson et al. 2014). Nests occur primarily in underground cavities such as old squirrel or other animal nests and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among railroad ties (Jepson et al. 2014). Food plant genera include but are not limited to: *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, *Eriogonum*.

The proposed Project area provides somewhat marginal habitat that could potentially support western bumble bee, and as described above was observed to provide at least floral food sources for what may be yellow-faced bumble bee. The grassland is heavily disturbed, and it is unknown what the abundance

within the Survey Area is of appropriate floral resources for obscure bumble bee. Botta's pocket gopher mounds and burrow holes that obscure bumble bee could use for nesting were also observed within the proposed Project area. Therefore, there is a moderate potential for western bumble bee to occur within the Survey Area.

Ten-mile shoulderband (*Noyo intersessa*). Ten-mile shoulderband is a species of terrestrial land snail (NatureServe 2023) with an S1S2 State Rank indicating its existence within California is imperiled to critically imperiled. Very little is currently understood about this species' life history and geographic range. This species is a member of the class Gastropoda, family Helminthoglyptidae, part of the informal group Pulmonata that includes snails and slugs characterized by the ability to breathe air (NatureServe 2023, Roth 1986). At the time of its initial description by Roth (1986), ten-mile shoulderband was known to occur along the coast north of Fort Bragg in Mendocino County and near the South Fork Eel River in Humboldt County.

Ten-mile shoulderband has been observed within the "redwood zone" of Mendocino County (iNaturalist 2023). There is one iNaturalist observation recorded in oak woodland/savannah habitat located approximately 4.5 miles southeast of the Survey Area. The interior live oak woodland partially overlapping and adjacent to the east side of the proposed Power Block 1, and valley oak riparian woodland within the southeast edge of the Survey Area, could potentially support this species. Therefore, there is moderate potential for ten-mile shoulderband to occur within the Survey Area.

Coast Range newt (*Taricha torosa*). Coast Range newt is a CDFW Species of Special Concern with an S4 State Rank indicating there is a fairly low risk of extirpation within California. The Coast Range newt occurs along the coast ranges of California, from Mendocino County south to Los Angeles County and disjunct south to the Cuyumaca Mountains in San Diego County (CalHerps 2023, NatureServe 2023). This subspecies has also been recorded along the southern Sierra Nevada from Tulare County to Kern County (CalHerps 2023, Kuchta and Tan 2006). This species breeds in ponds, reservoirs, and streams. Terrestrial adults occupy various adjacent upland habitats, including grasslands, woodlands, and forests (CalHerps 2023, NatureServe 2023). Migration towards suitable breeding grounds usually occurs at night following the first rains in the fall. Adults are known to commonly migrate up to approximately one kilometer (0.62 mile) between upland terrestrial habitat and aquatic breeding habitat. Upon arriving at breeding sites, adults become aquatic and may remain at these sites for several weeks. Breeding typically occurs between December and May with optimal peaks between February and April (NatureServe 2023). Adults migrate back to subterranean refuges during the spring and remain at these aestivation sites through the summer. Larvae normally transform in the summer or fall, or when water dries up, of their first year (CalHerps 2023, NatureServe 2023).

Coast Range newt is known in the Redwood Valley and Ukiah region from multiple iNaturalist observations, the nearest being approximately 0.5 mile north of the Survey Area near Salt Hollow Creek (iNaturalist 2023). The proposed Project area is within the typical upland migration distance of potentially suitable aquatic breeding habitat. Intermittent Stream-1 located approximately 280 feet southeast of the proposed temporary laydown area, and the downstream Intermittent Stream-2, provide suitable slow-moving (low gradient) stream breeding habitat to support this species, although it may not contain water for long enough for eggs/larvae to fully develop and metamorphose. A small human-made agricultural impoundment, located along Intermittent Stream-2 approximately 660 feet to the southeast, provides suitable aquatic breeding habitat more likely to remain inundated for full development of larvae. The proposed Project area contains upland grassland habitat with Botta's pocket gopher burrows that provide potentially suitable underground refugia for this species; however, it is unlikely that Coast Range newt would migrate to burrows in the grassland as it is less densely vegetated and, therefore, exposed to the sun and heat. The interior live oak woodland adjacent to and partially overlapping the eastern edge of the proposed Power Block 1 area, and the valley oak riparian woodland within the southeast edge of the Survey Area, provide more suitable upland habitat with more vegetative cover and other refugia that

could support this species. Therefore, there is low potential for Coast Range newt to occur within the proposed Project area but a moderate potential to occur within the Survey Area.

Western pond turtle (*Emys [=Actinemys] marmorata*). The western or northwestern pond turtle is a CDFW Species of Special Concern with an S3 State Rank indicating it has a moderate risk of extirpation within California. It occurs in perennial waters such as lakes, ponds, rivers, streams, irrigation ditches, and sloughs with aquatic vegetation, deep or muddy water for cover, and sunny openings (CalHerps 2023, Jennings and Hayes 1994). It needs basking sites for thermoregulation, such as logs, vegetation mats, open banks, or rock outcrops adjacent to deep water for escape. Although primarily aquatic, pond turtles leave aquatic habitats to mate, and some overwinter in uplands (CalHerps 2023, Jennings and Hayes 1994, Holland 1991). Suitable upland habitat for egg-laying includes unshaded sandy banks or grassy, open fields on unshaded, south-facing slopes with generally less than 25 percent slope. Nests are typically within 650 feet (200 meters [m]) of aquatic habitats. Mating typically occurs in April and May with hatchlings emerging in late summer or fall, sometimes overwintering in the nest to emerge the following spring (CalHerps 2023). This turtle occurs in suitable habitats throughout California (CDFW 2023a).

Western pond turtle is known in the Redwood Valley and Ukiah region from five CNDDB records (three unprocessed) and three iNaturalist observations, the nearest being an unprocessed CNDDB observation located along the Russian River approximately 0.4 mile south of the Survey Area (CDFW 2023b, iNaturalist 2023). The proposed Project area is within the typical upland migration distance of potentially suitable aquatic habitat. Intermittent Stream-1 located approximately 280 feet southeast of the proposed temporary laydown area, and the downstream Intermittent Stream-2, provide marginally suitable aquatic habitat that could potentially support this species. Both intermittent streams have a dense shaded riparian canopy, except for Intermittent Stream-1 underneath the electrical lines, that may hinder basking behavior. Both streams also have steep banks which may hinder migrational movements to uplands. A small human-made agricultural impoundment, located along Intermittent Stream-2 approximately 660 feet to the southeast, provides suitable aquatic habitat to support this species. Although the Pinole gravelly loam soils mapped within the proposed Project area are described as typically slightly hard and friable in the upper ten inches (NRCS 2023), the soils within the proposed Project area were not observed to be loose, making it unlikely that a western pond turtle could excavate a nest or bury itself to overwinter within the grassland. The mowing disturbance the site experiences at least annually has likely contributed to compacting the soils over time. Therefore, there is low potential for western pond turtle to occur within the proposed Project area but a moderate potential to occur within the Survey Area.

Cooper's hawk (*Accipiter cooperi*). Cooper's hawk is recognized as a CDFW Species of Special Concern and has an S3 State Rank indicating it has a moderate risk of extirpation within California. This raptor species is widespread, occurring throughout much of the United States, southern Canada, and northern Mexico. In California this species is a widespread but infrequent breeder but is not considered common at any location (ABB 2023, CWHR 2022). The Cooper's hawk breeds in small and large deciduous, conifer, and mixed woodlands. It also nests in pine plantations and suburban and urban environments. In California, this species nests predominately in oaks and pines. Cooper's hawks use a variety of habitat types with vegetative cover and often hunt on the edges of wooded areas. This species generally breeds from early April into early August, with peak activity in June (ABB 2023, CWHR 2022).

Cooper's hawk is known in the Redwood Valley and Ukiah region from numerous records, both in breeding and winter seasons, in iNaturalist and eBird, the nearest being an eBird observation recorded in winter of 2021 located approximately 0.9 miles west of the Survey Area (eBird 2023, iNaturalist 2023). No CNDDB records for this species exist in the nine-quad literature search area. Suitable nesting and foraging habitat is present in the interior live oak woodland present within the edge of the proposed Project area (Power Block 1) and in the valley oak riparian woodland located within the Survey Area approximately 280 feet southeast of the Project area. The isolated trees within the grassland of the proposed Project area and the ornamental landscaping and windrow trees on rural residential parcels within the Survey Area also

provide somewhat suitable nesting and foraging habitat. Therefore, there is a high potential for Cooper's hawk to occur within the Survey Area.

Sharp-shinned hawk (*Accipiter striatus*). Sharp-shinned hawk is designated a CDFW Watch List species, having been removed from the Species of Special Concern list in 2008, and has a State Rank of S3 indicating it has a moderate risk of extirpation within California. In California, sharp-shinned hawks breed throughout the state, including the northern half of the state, and, to a lesser extent, the mountains of southern California (Small 1994). Wintering grounds extend from the southern portions of Canada south throughout the United States and Mexico into Central America (ABB 2023, CWHR 2022). In California, this species typically nests in coniferous forests, often within riparian areas or on north-facing slopes (Stephenson and Calcarone 1999). Where conifers are scarce, cottonwoods, poplars, and other tall riparian trees may be used for nest sites (Bent 1937). Foraging habitat during the breeding season is essentially the same as that chosen for nesting. During the winter, however, males tend to hunt most frequently among hedgerows, field edges, and other ecotonal habitats, while females typically hunt in extensive stands of forest or riparian areas (Meyer 1987). This species generally breeds from early April into early August, with peak activity between late May and July (ABB 2023, CWHR 2022).

Sharp-shinned hawk is known in the Redwood Valley and Ukiah region from numerous records, both in breeding and winter seasons, in iNaturalist and eBird, the nearest being an eBird observation recorded in spring of 2022 located approximately 0.5 mile northwest of the Survey Area (eBird 2023, iNaturalist 2023). No CNDDB records for this species exist in the nine-quad literature search area. Although not the species' preferred habitat, suitable nesting and foraging habitat is present in the interior live oak woodland present within the edge of the proposed Project area (Power Block 1) and in the valley oak riparian woodland located within the Survey Area approximately 280 feet southeast of the proposed Project area. Therefore, there is a moderate potential for sharp-shinned hawk to occur within the Survey Area.

Great egret (*Ardea alba*). Great egret is a CDFW Special Animal and has a State Rank of S4 indicating it has a fairly low risk of extirpation within California. This waterbird species is a resident to medium-distant migrant (ABB 2023, CWHR 2022). Most great egrets move south for winter, traveling as far as the West Indies or southern Central America. This cosmopolitan species inhabits freshwater, estuarine, and marine wetlands. Great egrets live in colonies (rookery) in trees or shrubs with other waterbirds during the breeding season, typically located on lakes, ponds, marshes, estuaries, impoundments, and islands. This waterbird species primarily hunts belly-deep or shallower water but is also known to sometimes hunt in uplands. This species generally breeds from March to July (ABB 2023, CWHR 2022).

Great egret is known in the Redwood Valley and Ukiah region from numerous records, both in breeding and winter seasons, in iNaturalist and eBird, the nearest being an eBird observation recorded in spring of 2022 located approximately one mile northwest of the Survey Area (eBird 2023, iNaturalist 2023). No CNDDB records for this species exist in the nine-quad literature search area. Suitable nesting habitat is present in the valley oak riparian woodland along Intermittent Stream-1 located in the Survey Area approximately 280 feet southeast of the proposed Project area (temporary laydown area). Intermittent Stream-1 provides suitable foraging habitat in the limited areas where the in-channel vegetation is not as dense. The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable upland foraging habitat to support this species. Therefore, there is moderate potential for great egret to occur within the Survey Area.

Great blue heron (*Ardea herodias*). Great blue heron is a CDFW Special Animal and has a State Rank of S4 indicating it has a fairly low risk of extirpation within California. This waterbird species is common all year throughout most of California (ABB 2023, CWHR 2022). Few rookeries are found in southern California, but many are scattered throughout northern California. Great blue herons are commonly found in shallow estuaries and fresh or saline emergent wetlands. However, they also can occur along riverine and rocky marine shores, in croplands, pastures, and in mountains above foothills. Secluded groves of tall trees near shallow water are preferred for nesting sites. This waterbird species primarily hunts belly-deep

or shallower water but is also known to sometimes hunt in uplands. This species generally breeds from February through July (ABB 2023, CWHR 2022).

Great blue heron is known in the Redwood Valley and Ukiah region from numerous records, both in breeding and winter seasons, in iNaturalist and eBird, the nearest being an eBird observation recorded in summer of 2020 located approximately 0.5 mile west of the Survey Area (eBird 2023, iNaturalist 2023). No CNDDB records for this species exist in the nine-quad literature search area. Suitable nesting habitat is present in the valley oak riparian woodland along Intermittent Stream-1 located in the Survey Area approximately 280 feet southeast of the proposed Project area (temporary laydown area). Intermittent Stream-1 provides suitable foraging habitat in the limited areas where the in-channel vegetation is not as dense. The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable upland foraging habitat to support this species. Therefore, there is moderate potential for great egret to occur within the Survey Area.

Ferruginous hawk (*Buteo regalis*). Ferruginous hawk is designated a CDFW Watch List species and has a State Rank of S3S4 indicating it has a low to moderate risk of extirpation within California. This raptor species occurs throughout western North America from southernmost Canada between the Great Plains and Rocky Mountains, south to northern Arizona and New Mexico (ABB 2023, CWHR 2022). The ferruginous hawk is an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges of California. Generally, this species arrives in California in September and departs by mid-April. Their breeding range extends into the Great Basin region of northeast California. This raptor species forages in open grasslands, agriculture (primarily grazing lands), sagebrush flats, desert scrub, and fringes of pinyon–juniper habitats (ABB 2023, CWHR 2022).

Ferruginous hawk is known in the Redwood Valley and Ukiah region from numerous records, both in winter and during migration, in iNaturalist and eBird, the nearest being an eBird observation recorded in spring migration of 2017 located approximately 0.9 mile northwest of the Survey Area (eBird 2023, iNaturalist 2023). The Survey Area is located outside of the breeding range for this species. The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable foraging habitat to support this species. Therefore, there is high potential for ferruginous hawk to occur within the Survey Area.

Northern harrier (*Circus hudsonius*). Northern harrier CDFW Species of Special Concern, federal Bird of Conservation Concern, and has a State Rank of S3 indicating it has a moderate risk of extirpation within California. This raptor species is found throughout the northern hemisphere. In California, northern harrier is a permanent resident of the northeastern plateau and coastal areas and a less common resident of the Central Valley (ABB 2023, CWHR 2022). Breeding occurs in the Central Valley, Siera Nevada, and northeastern plateau, typically between mid-March and September. Nests are typically built on the ground or in shrubby vegetation, usually along the edge of a marsh or along rivers or lakes. Northern harrier forages in a wide variety of open habitats in California, including meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands (ABB 2023, CWHR 2022).

Northern harrier is known in the Redwood Valley and Ukiah region from numerous records, both in winter and during migration, in iNaturalist and eBird, the nearest being an eBird observation recorded in spring migration of 2022 located approximately one mile west of the Survey Area (eBird 2023, iNaturalist 2023). The Survey Area is located outside of the breeding range for this species. The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable foraging habitat to support this species. Therefore, there is high potential for northern harrier to occur within the Survey Area.

White-tailed kite (*Elanus leucurus*). White-tailed kite is a California Fully Protected Species and has a State Rank of S3S4 indicating it has a low to moderate risk of extirpation within California. This raptor species is a permanent resident in California, southern Texas, Washington, Oregon, and Florida (ABB 2023, CWHR 2022). In California, this species inhabits coastal and valley lowlands and is typically found in agricultural

areas. The white-tailed kite inhabits savanna, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields (Dunk 1995). Nests are typically built in the upper third of trees, commonly in dense stands of oak or willow, either in isolated trees in open-country, within forests, or along forest edges. This species generally breeds from February through October, peaking from May to August (ABB 2023, CWHR 2022).

White-tailed kite is known in the Redwood Valley and Ukiah region from numerous records, throughout the seasons, the nearest being an eBird observation recorded in summer of 2020 located approximately one mile west of the Survey Area (eBird 2023, iNaturalist 2023). Suitable nesting habitat is present in the interior live oak woodland present within the edge of the proposed Project area (Power Block 1); in the valley oak riparian woodland located within the Survey Area approximately 280 feet southeast of the proposed Project area; and the isolated northern catalpa and valley oak trees in the proposed Project area (Power Block 2). The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable foraging habitat to support this species. Therefore, there is high potential for white-tailed kite to occur within the Survey Area.

Merlin (*Falco columbarius*). Merlin is a CDFW Watch List Species that was removed from the Species of Special Concern list in 2008, and has a State Rank of S3S4 indicating it has a low to moderate risk of extirpation within California. This raptor species breeds from the northward tree limit in Alaska and Canada southward to southern Alaska, Oregon, Idaho, South Dakota, the northern Great Lakes region, New York, Maine, and Nova Scotia. Breeding does not occur in California; however, this species occurs in most of the western half of the state below roughly 4,000 feet through the winter season (September to May) (CWHR 2022). The merlin uses a variety of habitats and frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and communities in early successional stages. In winter, merlin frequent shorelines to prey upon shorebirds (ABB 2023, CWHR 2022).

Merlin is known in the Redwood Valley and Ukiah region from numerous records, both in winter and during migration, the nearest being an eBird observation recorded in winter of 2018 located approximately 0.5 mile north of the Survey Area (eBird 2023, iNaturalist 2023). The Survey Area is located outside of the breeding range for this species. The Survey Area lacks this species' preferred winter foraging habitat of shorelines but contains other suitable foraging habitat; the wild oat and annual brome grassland, interior live oak woodland, and valley oak riparian woodland could support foraging merlin. Therefore, there is moderate potential for white-tailed kite to occur within the Survey Area.

American peregrine falcon (*Falco peregrinus anatum*). American peregrine falcon is a federal Bird of Conservation Concern, a California Fully Protected species, and has a State Rank of S3S4 indicating it has a low to moderate risk of extirpation within California. This raptor species has a worldwide distribution that is more extensive than that of any other bird but is an uncommon breeder or winter migrant throughout much of California (ABB 2023, CWHR 2022). The American peregrine falcon nest almost exclusively on protected ledges of high cliffs, primarily in woodland, forest, and coastal habitats (USFWS, 1982). They will also use human-made structures such as tall buildings and bridges. Nest sites usually provide a panoramic view of open country, are near water, and are associated with a local abundance of passerine, waterfowl, or shorebird prey (Johnsgard 1990). Forages primarily on birds while in flight in a variety of open habitats including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. This species generally breeds from early March to late August (ABB 2023, CWHR 2022).

American peregrine falcon is known in the Redwood Valley and Ukiah region from numerous records, throughout the seasons, the nearest being an eBird observation recorded in summer of 2021 located approximately 0.6 mile west of the Survey Area (eBird 2023, iNaturalist 2023). The Survey Area lacks suitable nesting habitat. Suitable foraging habitat is present in the wild oat and annual brome grassland present throughout most of the Survey Area and the early-mid successional part of the interior live oak

woodland present within the northeast edge of the proposed Project area (Power Block 1). Therefore, there is high potential for American peregrine falcon to occur within the Survey Area.

Northern spotted owl (*Strix occidentalis caurina*). Northern spotted owl is listed as threatened under both the federal ESA and CESA, and has a State Rank of S2 indicating its existence in California is imperiled. Northern spotted owls range from southwestern British Columbia south into northwestern California to Marin County (Forsman et al. 1984, Courtney et al. 2004). The northern spotted owl's distribution is limited by its nesting habitat, late seral forests containing suitable nesting platforms such as cavities, broken treetops, and mistletoe brooms. The USFWS has identified several conifer or mixed conifer forest types as essential nesting habitat (USFWS 2012). This owl species thermoregulate by using different parts of the tree canopy. During very warm weather, these late seral forests provide roosts in cool shady areas, usually within the lower understory (Forsman et al. 1984, Courtney et al. 2004). In cold weather, they tend to select roosts in the upper canopy with overhead branches (Courtney et al. 2004). Northern spotted owl survival requires large amounts of late-successional forest within their territory (Blakesley et al. 1992, Dugger et al. 2005). Forest stands used by northern spotted owls usually have high canopy closure and high structural diversity (Forsman et al. 1984, Thomas et al. 1990). They are primarily nocturnal foragers (Forsman et al. 1984), but they can be opportunistic diurnal hunters (Courtney et al. 2004). The dusky-footed woodrat, the northern spotted owl's primary prey species in northwestern California, is at its highest density in early seral stages such as timber harvest clearcuts existing as shrublands or with saplings; or timber harvest clearcuts with brush and pole-size trees (Sakai and Noon 1997, Sakai and Noon 1993). In northern California, woodrats are associated with drier, early seral mixed-conifer forest, or open, late seral forests (Thomas et al. 1990, Ward et al. 1998, Courtney et al. 2004). This species generally breeds February or March, with chicks generally leaving the nest in late May or June and continuing to be dependent upon their parents into September (CDFW 2016).

Northern spotted owl is known in the Redwood Valley and Ukiah region from two CDFW BIOS Spotted Owl Viewer records from 2016 and 2017 located at the Redwood Valley Outdoor Education Project land approximately 0.8 miles northwest of the Survey Area. The Survey Area lacks this species' preferred nesting habitat of late-seral conifer or mixed-conifer forest. The Survey Area contains late successional interior live oak woodland with early mid-successional stages located along the edge of proposed Power Block 1 that could support foraging or dispersal activities of this species. Therefore, there is moderate potential for this species to occur within the Survey Area.

Pallid bat (*Antrozous pallidus*). Pallid bat is a CDFW Species of Special Concern and has a State Rank of S3 indicating it has a moderate risk of extirpation within California. This bat species is most abundant in xeric ecosystems such as rocky, arid deserts, but also occurs in grasslands, shrublands, woodlands, and forests most commonly below 6,000 feet elevation (CWHR 2022, WBWG 2017). This species appears to prefer edges and open areas without trees (SNFPA 2001). Roosting sites include rock crevices, mines, caves, tree hollows, buildings, bridges, and culverts (Hermanson and O'Shea 1983, Tatarian 2001). The diet of pallid bats primarily consist of large arthropods which are gleaned from the ground or on the surfaces of vegetation (Hermanson and O'Shea 1983, WBWG 2017). The pallid bat maternity season is generally from later April to late August, depending upon the location's latitude and climate (WBWG 2017).

Pallid bat is known in Survey Area region from one historic 1947 CNDDB record located approximately 4.75 miles east. The Survey Area is within the known geographic and elevational range for this bat species. There are trees present within the Survey Area that could potentially provide day-roost habitat for pallid bat; the presence of suitable tree crevices, cavities, or hollows within the Survey Area is unknown. Potentially suitable roosting habitat is present in the interior live oak woodland present within the edge of the proposed Project area (Power Block 1); in the valley oak riparian woodland located within the Survey Area approximately 280 feet southeast of the proposed Project area; and the isolated northern catalpa and valley oak trees in the proposed Project area (Power Block 2). The wild oat and annual brome grassland present throughout most of the Survey Area provides suitable foraging habitat to support this

species. The buildings and other structures present within the adjacent substation do not provide suitable day-roost habitat for pallid bat and are subject to regular disturbance from human visitation and noise from electrical equipment operations. Therefore, there is moderate potential for pallid bat to occur within the Survey Area.

5.3. Wildlife Habitat

5.3.1. Critical Habitat

The Survey Area is not located within USFWS or NOAA Fisheries designated critical habitat or essential fish habitat. USFWS and NOAA Fisheries designated critical habitat located nearest to the Survey Area are listed below:

- Northern spotted owl, USFWS-designated critical habitat, approximately 6.7 miles west northwest
- Steelhead (Central California Coast DPS), NOAA Fisheries-designated critical habitat
  - Salt Creek, approximately 0.5 mile north
  - Russian River, approximately 0.3 mile west
- Chinook salmon (*Oncorhynchus tshawytscha*), California Coastal ESU, NOAA Fisheries-designated critical habitat
  - Russian River, approximately 0.3 mile west

The Russian River watershed (below dams) is NOAA Fisheries-designated essential fish habitat for chinook salmon California Coastal ESU and coho salmon (*O. kisutch*) Central California Coast ESU. The proposed Project is not anticipated to impact any of the habitats described above.

5.3.2. Wildlife Corridors

The ability for wildlife to move freely among populations and habitat areas is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to individual animals' ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

The California Essential Habitat Connectivity Project was commissioned by the California Department of Transportation (Caltrans) and CDFW to create a statewide assessment of essential habitat connectivity to be used for conservation and infrastructure planning (Caltrans and CDFW 2010). One of its goals was to create the Essential Connectivity Map, which depicts large, relatively natural habitat blocks that support native biodiversity (natural landscape blocks) and areas essential for ecological connectivity between them (essential connectivity areas). This map does not reflect the needs of particular species but is based on overall biological connectivity and ecological integrity. A more detailed analysis is required to assess local and regional needs for connectivity and develop linkage designs based on the requirements of individual species (Caltrans and CDFW 2010). The Survey Area is not located within any identified Essential Habitat Connectivity Areas or Natural Landscape Blocks. The Survey Area is likely to support more localized movement through Redwood Valley for common species such as coyote, bobcat, deer, and others but is not expected to impact wildlife corridors.

5.3.3. Migratory Birds and Birds of Prey

As described in subsections 3.1 and 3.2, the MBTA and the FGC protect migratory birds and birds of prey, including their eggs, nests and young. In addition to protected bird species discussed in Section 5.2.2, other migratory bird species that have the potential to nest in the Survey Area are regionally common. These include California quail (*Callipepla californica*), lark sparrow (*Chondestes grammacus*), American

crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), and acorn woodpecker (*Melanerpes formicivorus*), which were observed during the biological surveys. Common bird species could potentially nest in many habitats present within the Survey Area, including on the ground within the wild oat and annual brome grassland; in the isolated trees located within the grassland; in the shrubs and trees of the interior oak woodland and valley oak riparian woodland; and the landscape/ornamental trees along the private road south of the Project and on the rural residential properties west and north of the Project. Therefore, there is a high potential for nesting birds to occur within the Survey Area.

5.3.4. Important Bird Areas

As part of a national and international effort, the National Audubon Society works to identify, monitor, and protect essential habitat for breeding, wintering, and migrating birds (NAS 2023). Audubon California has used the best science to identify and map the Important Bird Areas (IBA) within California. Part of an international effort, these sites were nominated by local experts and selected according to strict criteria:

- Support over 1 percent of the global or 10 percent of the state population of one or more sensitive species.
- Support more than nine sensitive bird species.
- 10,000 or more observable shorebirds in one day.
- 5,000 or more observable waterfowl in one day.

The Survey Area is not located within a designated IBA. The nearest IBA is Clear Lake, located approximately 17 miles southeast of the Survey Area.

5.4. Waters

Three human-made stormwater drainage ditch/swale features (Drainage-1, -2, and -3) were observed and mapped within the Survey Area that overlap the proposed Project area. Table B-4 below summarizes the jurisdictional features present and the features are displayed on Figure B-5. As described previously in Section 4.4, a formal jurisdictional delineation using a sub-meter GPS was not conducted; however, USACE methodology was used and the three drainage features delineated using a combination of field observations and Google Earth aerial imagery. Arid West data sheets are presented in Attachment B-5.

Figure B-5 also displays the locations of a roadside drainage ditch located west of the proposed Power Block 2 area, Intermittent Stream-1 located in the southeast edge of the Survey Area, and Intermittent Stream-2 located just beyond the Survey Area. These features were not delineated like the three drainage ditch/swale features and are included for reference and discussions of hydrologic connectivity and special-status species habitat. Both are briefly described following the description of the proposed Project area drainages.

Table B-4. Summary of Jurisdictional Waters within the Survey Area that Partially Overlap the Proposed Project Area

	USACE Non-wetland Waters of the U.S. (acres)	RWQCB Non-wetland Waters of the State (acres)	RWQCB Wetland Waters of the State (acres)	CDFW Jurisdictional Streambed (acres)
Drainage-1	0.067	0.101	0	0.101
Drainage-2	0.002	0.002	0.011	0.012
Drainage-3	0	0	0.006	0.006
Total Acreage:	**0.069**	**0.069**	**0.017**	**0.119**

All three human-made stormwater drainage ditch/swale features appear to have been excavated within uplands and are characterized by ephemeral flows during storm events. Drainage-1 (segments a and b) and Drainage-2 (segment a) have hydrologic connection to Intermittent Stream-2, a tributary of the

Russian River, via the East Road roadside drainage ditch. The East Road roadside drainage ditch present on the east side of East Road directs flows, crossing driveways via culverts, to the intermittent riverine feature located approximately 1,320 feet south southeast of the PG&E substation access road.

Drainage-1

Drainage-1 is primarily located north and east of the substation and its access road. It originates as a concrete-lined V-ditch (segment 1c) that starts outside and upslope of the southeast corner of the substation, wrapping around the east side of the substation, then transitioning to an unlined drainage ditch/swale on the north side of the substation. The majority of the V-ditch running parallel to the east substation fence was clogged with sediment and thatch. The concrete V-ditch varies in size from approximately two to three feet wide with a depth of approximately 1.5 feet. The V-ditch transitions to an unlined drainage ditch/swale between the substation and the proposed Power Block 1. The unlined portion of Drainage-1 varies from a well-defined channel with bed and bank to a less-defined swale, varying in size from approximately 1.5 to 8 feet wide and one inch to six inches in depth, possibly due to erosion of the ditch and accumulation of deposited sediment. Several rip-rap energy dissipators are present along Segments 1a and 1b. Segment 1b crosses the proposed access road for Power Block 1 and proposed trench line then passes through a plastic 30-inch diameter culvert at the PG&E yard access road. Segment 1a meanders through a vacant field east of the proposed Project area to discharge to the roadside drainage ditch present along the east side of East Road.

Drainage-1 segments 1a and 1b are anticipated to fall under USACE and RWQCB as non-wetland waters of the U.S. and state, respectively, as there is a hydrologic connection to a paragraph (a)(3) jurisdictional tributary. Drainage-1 segments 1a and 1b are also anticipated to fall under CDFW jurisdiction as the feature has a defined bed and bank in many reaches and is hydrologically connected by swales. Segment 1c is not anticipated to fall under USACE jurisdiction as it is concrete lined but is still anticipated to fall under RWQCB and CDFW jurisdictions.

Drainage-2

Drainage-2 is an unlined drainage ditch/swale located west of the substation and south of the substation access road. It originates at a culvert along the western substation fence line. The culvert directs overflow from a stormwater management catchment basin within the substation into segment 2b. Segment 2b varies from a well-defined channel with bed and bank to a less-defined swale, varying in size from approximately 2.5 to 7 feet wide and two to three inches in depth, possibly due to erosion of the ditch and accumulation of deposited sediment. Approximately 143 feet west of the culvert, the feature contours disappear and the ground flattens out, creating a situation where any flows directed from the culvert in segment 2b would sheet flow overland. The feature contours reappear at segment 2a approximately 18 feet west of segment 2b. Segment 2a has a well-defined channel with bed and bank, measuring approximately 2.5 feet wide by two inches deep, and discharges to the roadside drainage ditch present along the east side of East Road. Segment 2b crosses the proposed access road for Power Block 2 and proposed trench line.

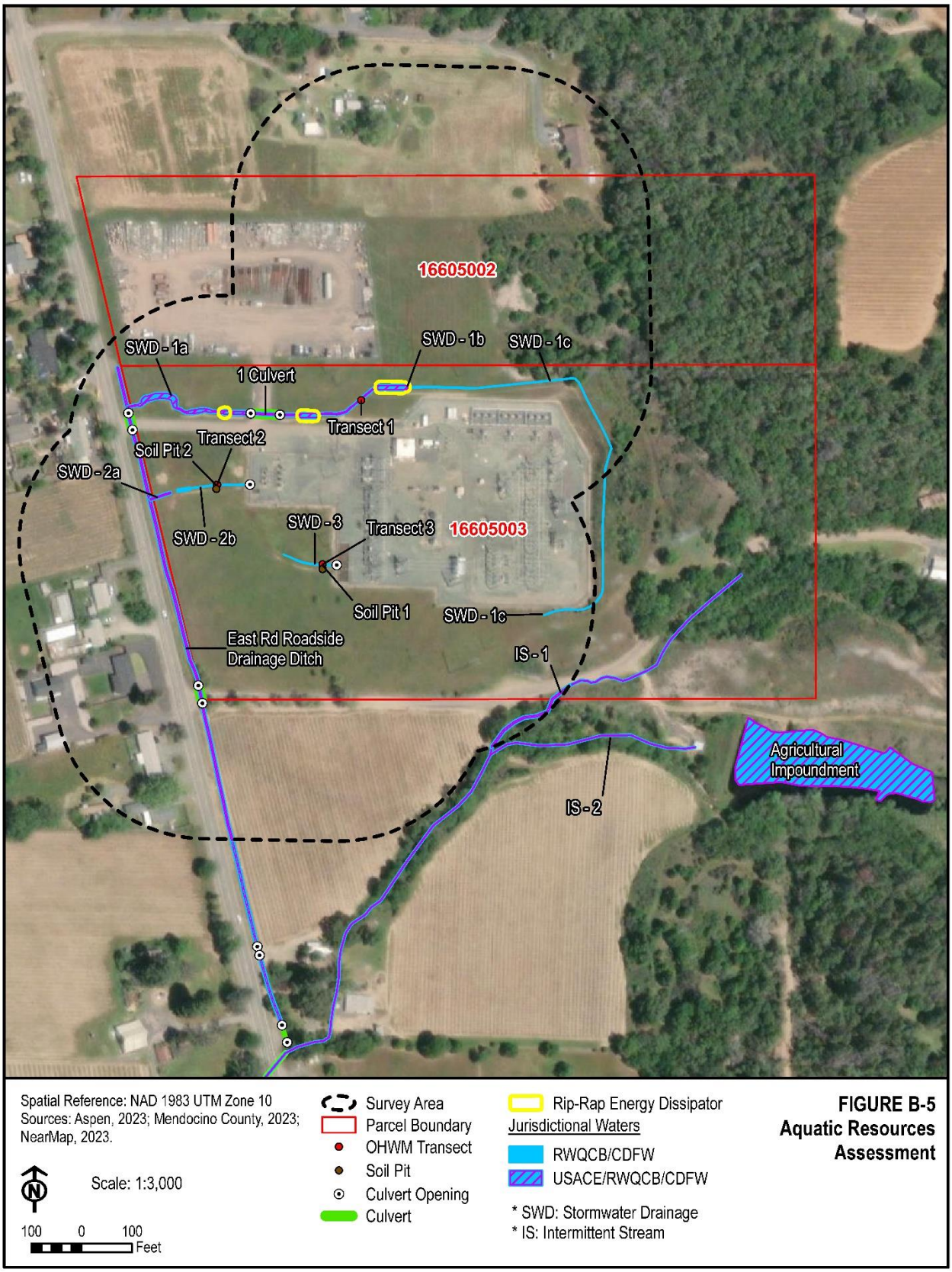
Drainage-2 segment 2a is anticipated to fall under USACE and RWQCB as a non-wetland water of the U.S. and state, respectively, as there is a hydrologic connection to a paragraph (a)(3) jurisdictional tributary. Drainage-2 segment 2a is also anticipated to fall under CDFW jurisdiction as the feature has a defined bed and bank. Segment 2b is not anticipated to fall under USACE jurisdiction as it lacks a hydrological connection to a paragraph (a)(3) jurisdictional tributary. Segment 2b is anticipated to fall under RWQCB jurisdiction as a wetland water of the state as it meets the criteria for hydric soils and wetland hydrology; hydrophytic vegetation does not need to be present to qualify as a wetland water of the state. Segment 2b is also anticipated to fall under CDFW jurisdiction as it has a defined bed and bank in many reaches and is hydrologically connected by swales.

Drainage-3

Drainage-3 is also an unlined drainage ditch/swale located west of the substation and south of the substation access road. It originates at a culvert along the western substation fence line. The culvert directs overflow from a stormwater management catchment basin within the substation into Drainage-3. Drainage-3 is a well-defined channel with bed and bank, varying in size from approximately 1.5 to 3 feet wide and two to six inches in depth, possibly due to erosion of the ditch and accumulation of deposited sediment. Approximately 112 feet west of the culvert, the feature contours disappear and the ground flattens out, creating a situation where any flows directed from the culvert in Drainage-3 would sheet flow overland. Drainage-3 is within the proposed temporary laydown yard area.

Drainage-3 is anticipated to fall under RWQCB jurisdiction as a wetland water of the state as it meets the criteria for hydrophytic vegetation, hydric soils, and wetland hydrology. Drainage-3 is also anticipated to fall under CDFW jurisdiction as it has a defined bed and bank. This feature is not anticipated to fall under USACE jurisdiction as a wetland water of the U.S. as it is isolated and lacks surface hydrologic connection to any USACE jurisdictional features.

Figure B-5. Aquatic Resources Assessment



East Road Roadside Drainage Ditch

The roadside drainage ditch is located along the east side of East Road approximately 10 to 20 feet west of the proposed Power Block 2 area. The ditch starts approximately 90 feet north of the substation access road and terminates at Intermittent Stream-2 approximately 1,320 feet south southeast of the same access road. The drainage ditch directs stormwater collected from adjacent uplands and two of the drainages in the proposed Project area (described above) and directs flows to discharge to Intermittent Stream-2. Several culverts are present at road and driveway crossings. The ditch is approximately three feet wide and six inches or less deep and mostly unvegetated in the reach adjacent to the proposed Project area.

Intermittent Stream-1 and -2

Intermittent Stream-1 is a small intermittent stream located approximately 280 feet southeast of the proposed temporary laydown area and is tributary to Intermittent Stream-2, located beyond the 300-foot Survey Area, that crosses through the vineyard land to the south. Intermittent Stream-1 is not a feature mapped on the Redwood Valley 7.5-minute quad map or in the USFWS National Wetlands Inventory Wetlands Mapper. This small stream feature has a channel approximately three to four feet wide as observed in Google Earth aerial imagery, depth is unknown as this area was inaccessible due to being located on private land. There are at least three human-made impoundments located along Intermittent Stream-1 within one mile of the Survey Area which are anticipated to impact surface water flows downstream. Except for an area along Intermittent Stream-1 immediately under overhead electrical lines, both intermittent streams have tree and shrub dominated riparian habitat best described as valley oak riparian woodland as discussed in Section 5.1 above. Intermittent Stream-2 was observed to be dry at the time of the site visits, has a channel approximately 20 to 25 feet wide with steep banks, and contained gravel and fine sediment at its crossing with East Road approximately 730 feet south of the proposed Project area.

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Attachment B-1

PHOTO EXHIBIT

Photograph 1:
Facing southwest from northeast corner of Power Block 1 site

View of the proposed Power Block 1, located in the northern part of the proposed Project area. Most of this area of the proposed Project area is best characterized as wild oat – annual brome grassland and is dominated by non-native plant species. The PG&E yard is in the background photo-right, and substation photo-left.

Photograph 2:
Facing southeast from northeast corner of Power Block 1 site

View of the area best described as interior live oak woodland/ forest along the east side of the proposed Power Block 1 site.

Photograph 3:
Facing northeast from south end of Power Block 1's access road

View of the proposed access road to Power Block 1. The area had been mowed at some point prior to the site visit.

Photograph 4:
Facing northeast from substation road towards Drainage-1 segment 1b

View of Drainage-1 segment 1b on the east side of the proposed access road for Power Block 1. This section of segment 1b is more ditch-like and characterized by a well-defined channel. The area had been mowed at some point prior to the site visit.

Photograph 5:
Facing west along Drainage-1 segment 1b from proposed access road to Power Block 1

View of an energy dissipator along Drainage-1 segment 1b on the west side of the proposed access road for Power Block 1 prior to crossing through the PG&E yard access road culvert. This section of segment 1b is more swale-like and characterized by a less-defined channel. The area had been mowed at some point prior to the site visit.

Photograph 6:
Facing west along Drainage-1 segment 1a west of Power Block 1's access road

View of Drainage-1 segment 1a and energy dissipator on the west side of the PG&E yard access road culvert. This section of segment 1a is more swale-like and characterized by a less-defined channel. The area had been mowed at some point prior to the site visit.

Photograph 7:
Facing west along Drainage-1 segment 1a west of Power Block 1's access road

View of Drainage-1 segment 1a where it discharges to the East Rd roadside drainage ditch. This section of segment 1b is more ditch-like and characterized by a well-defined channel. The area had been mowed at some point prior to the site visit.

Photograph 8:
Facing north from southwest corner of Power Block 2 site

View of the proposed Power Block 2, located in the southwestern portion of the proposed Project area. The area had been mowed at some point prior to the site visit.

Photograph 9:
Facing southeast from northwest corner of Power Block 2

View of the proposed Power Block 2, located in the southwestern portion of the proposed Project area. The area had been mowed at some point prior to the site visit.

Photograph 10:
Facing south southwest from the pad-mounted switchgear site

View of the proposed pad-mounted switch-gear and Power Block 2 access road sites. The switchgear site was primarily unvegetated and contained bare ground. The access road area had been mowed at some point prior to the site visit.

Photograph 11:
Facing east along Drainage-2 segment 2a west of the Power Block 2 access road

View of Drainage-2 on the west side of the proposed access road for Power Block 2. Segment 2a discharges to the East Road roadside drainage ditch, visible in the foreground of the photo. Segment 2b sheet flows overland where the drainage contours disappear and the ground flattens, visible in the middle of the photo. The area had been mowed at some point prior to the site visit.

Photograph 12:
Facing northwest from central part of temporary laydown yard site

View of the proposed temporary laydown yard site and Drainage-3. The area had been mowed at some point prior to the site visit.

Attachment B-2

CDFW CALIFORNIA NATURAL DIVERSITY DATABASE AND USFWS INFORMATION FOR PLANNING AND CONSULTATION

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Redwood Valley (3912332) OR Willits (3912343) OR Foster Mtn. (3912342) OR Van Arsdale Reservoir (3912341) OR Laughlin Range (3912333) OR Potter Valley (3912331) OR Orrs Springs (3912323) OR Ukiah (3912322) OR Cow Mountain (3912321))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Accipiter gentilis northern goshawk	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	2,500 3,382	433 S:2	0	0	0	0	0	2	2	0	2	0	0
Agelaius tricolor tricolored blackbird	G1G2 S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered USFWS_BCC-Birds of Conservation Concern	900 1,054	955 S:5	0	1	0	0	0	4	0	5	5	0	0
Alisma gramineum grass alisma	G5 S3	None None	Rare Plant Rank - 2B.2	426 1,280	14 S:2	0	1	0	0	0	1	1	1	2	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	950 950	420 S:1	0	0	0	0	0	1	1	0	1	0	0
Arborimus pomo Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	1,300 2,800	222 S:5	1	0	0	0	0	4	5	0	5	0	0
Arctostaphylos stanfordiana ssp. raichei Raiche's manzanita	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	1,210 1,820	13 S:3	0	0	0	0	0	3	2	1	3	0	0
Blennosperma bakeri Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	945 945	24 S:1	0	0	1	0	0	0	0	1	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	1,400 1,400	181 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus occidentalis western bumble bee	G3 S1	None Candidate Endangered	IUCN_VU-Vulnerable USFS_S-Sensitive	1,400 1,400	306 S:3	0	0	0	0	0	3	3	0	3	0	0
Brasenia schreberi watershield	G5 S3	None None	Rare Plant Rank - 2B.3 IUCN_LC-Least Concern	1,800 1,800	43 S:1	0	0	0	0	0	1	1	0	1	0	0
Carex comosa bristly sedge	G5 S2	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	1,360 1,360	31 S:1	0	0	0	0	0	1	1	0	1	0	0
Corynorhinus townsendii Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	860 860	635 S:1	0	0	0	0	0	1	1	0	1	0	0
Cryptantha excavata deep-scarred cryptantha	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive		5 S:1	0	0	0	0	0	1	1	0	1	0	0
Cuscuta jepsonii Jepson's dodder	G3 S3	None None	Rare Plant Rank - 1B.2		28 S:1	0	0	0	0	0	1	1	0	1	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	600 1,800	1427 S:5	0	1	1	0	0	3	2	3	5	0	0
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	593 593	523 S:1	0	0	0	0	0	1	1	0	1	0	0
Fritillaria roderickii Roderick's fritillary	G1Q S1	None Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	2,000 2,000	8 S:1	0	0	0	0	0	1	1	0	1	0	0
Gilia capitata ssp. pacifica Pacific gilia	G5T3 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	800 800	91 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Gonidea angulata western ridged mussel	G3 S2	None None	IUCN_VU-Vulnerable	1,360 1,360	157 S:1	0	0	0	0	0	1	1	0	1	0	0
Grimmia torenii Toren's grimmia	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,900 1,900	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Haliaeetus leucocephalus bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	1,566 1,566	332 S:1	0	1	0	0	0	0	0	1	1	0	0
Hesperolinon adenophyllum glandular western flax	G2G3 S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,440 4,000	48 S:6	0	1	0	0	0	5	6	0	6	0	0
Hysterocarpus traskii lagunae Clear Lake tule perch	G5T3 S3	None None	CDFW_SSC-Species of Special Concern	1,344 1,360	3 S:2	0	0	0	0	1	1	1	1	1	1	0
Icteria virens yellow-breasted chat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,300 1,300	101 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia burkei Burke's goldfields	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	620 620	36 S:1	0	0	1	0	0	0	0	1	1	0	0
Limnanthes bakeri Baker's meadowfoam	G1 S1	None Rare	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	580 1,800	21 S:12	3	3	2	0	1	3	7	5	11	0	1
Malacothamnus mendocinensis Mendocino bush-mallow	G1Q S1	None None	Rare Plant Rank - 1B.1	760 760	2 S:1	0	0	0	1	0	0	0	1	1	0	0
Martes caurina humboldtensis Humboldt marten	G4G5T1 S1	Threatened Endangered	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	6,183 6,183	44 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	620 1,540	64 S:8	1	3	2	0	0	2	1	7	8	0	0
Oncorhynchus mykiss irideus pop. 48 steelhead - northern California DPS summer-run	G5T2Q S2	Threatened Endangered	AFS_TH-Threatened	1,300 1,300	10 S:1	0	0	0	0	1	0	1	0	0	0	1
Oncorhynchus mykiss irideus pop. 49 steelhead - northern California DPS winter-run	G5T3Q S3	Threatened None	AFS_TH-Threatened	160 2,017	96 S:8	0	0	6	1	0	1	4	4	8	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	920 2,900	504 S:3	0	0	0	0	0	3	0	3	3	0	0
Pekania pennanti Fisher	G5 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	1,179 5,100	555 S:6	1	1	2	0	0	2	2	4	6	0	0
Piperia candida white-flowered rein orchid	G3? S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,650 2,120	222 S:3	0	1	1	0	0	1	0	3	3	0	0
Plagiobothrys lithocaryus Mayacamas popcornflower	GX SX	None None	Rare Plant Rank - 1A	950 950	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Pleuropogon hooverianus North Coast semaphore grass	G2 S2	None Threatened	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,160 2,400	27 S:15	2	11	1	0	0	1	1	14	15	0	0
Potamogeton epihydrus Nuttall's ribbon-leaved pondweed	G5 S2S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	1,400 1,400	25 S:1	0	0	0	0	0	1	1	0	1	0	0
Rana boylii pop. 1 foothill yellow-legged frog - north coast DPS	G3T4 S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	580 4,000	1606 S:61	1	9	1	0	0	50	25	36	61	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Setophaga petechia yellow warbler	G5 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	1,300 1,300	78 S:1	0	0	0	0	0	1	1	0	1	0	0
Silene bolanderi Bolander's catchfly	G2 S2	None None	Rare Plant Rank - 1B.2	845 1,837	30 S:7	0	0	0	0	0	7	6	1	7	0	0
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	G4T2 S2	None None	Rare Plant Rank - 1B.3 SB_UCSC-UC Santa Cruz	1,300 1,300	16 S:1	0	0	0	0	0	1	1	0	1	0	0
Taricha rivularis red-bellied newt	G2 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	580 10,000	136 S:18	0	0	0	0	0	18	14	4	18	0	0
Trichodon cylindricus cylindrical trichodon	G4G5 S2	None None	Rare Plant Rank - 2B.2	5,400 5,400	14 S:1	0	0	0	0	0	1	1	0	1	0	0
Trifolium buckwestiorum Santa Cruz clover	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden SB_UCSC-UC Santa Cruz SB_USDA-US Dept of Agriculture	995 995	64 S:1	0	1	0	0	0	0	0	1	1	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	1,327 1,327	56 S:1	0	1	0	0	0	0	0	1	1	0	0
Usnea longissima Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	1,280 1,280	206 S:1	0	0	0	1	0	0	1	0	1	0	0
Valley Oak Woodland Valley Oak Woodland	G3 S2.1	None None		1,325 1,325	91 S:1	0	0	0	0	0	1	1	0	1	0	0

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Mendocino County, California

Local office

Arcata Fish And Wildlife Office

(707) 822-7201
(707) 822-8411

1655 Heindon Road

1033 Heindon Road
Arcata, CA 95521-4573

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Burke's Goldfields Lasthenia burkei Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4338	Endangered

Contra Costa Goldfields Lasthenia conjugens — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/7058

Showy Indian Clover Trifolium amoenum — Endangered

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6459

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list,click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

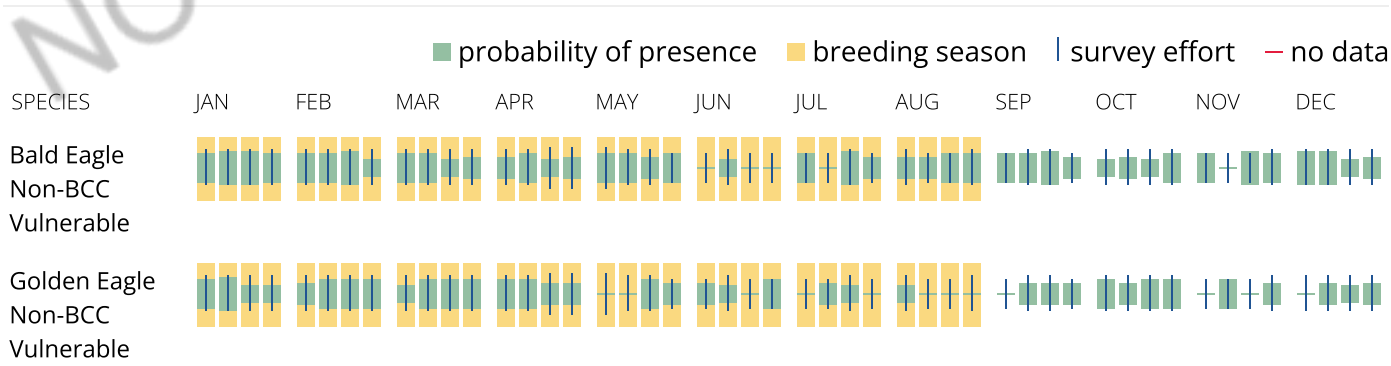
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-

measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25

California Gull Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cassin's Finch Carpodacus cassinii — Breeds May 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events

for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

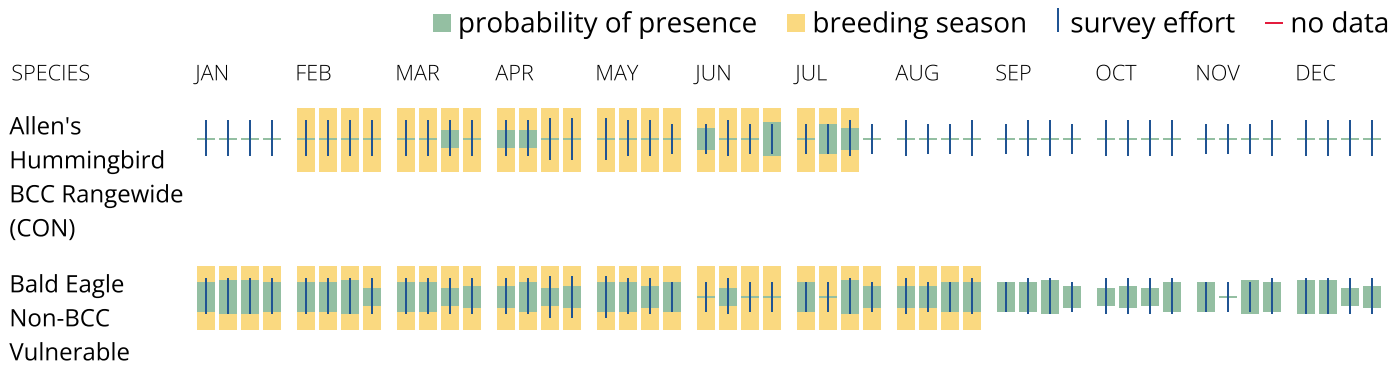
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

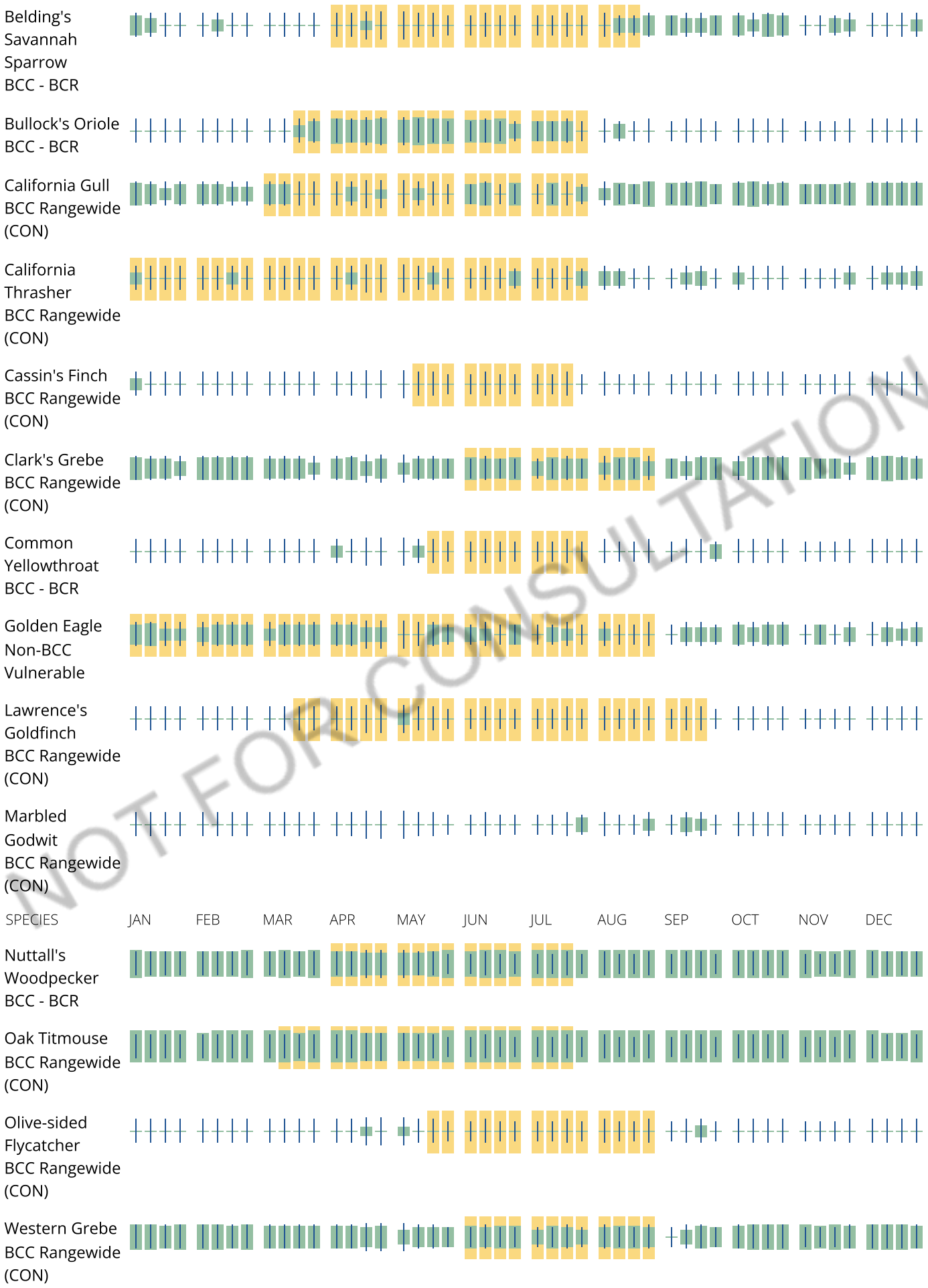
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Wrentit
BCC Rangewide
(CON)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird

on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is

the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment B-3

SPECIES OBSERVED

SPECIES OBSERVED

Common Name	Scientific Name	Native (N) / Introduced (I)
Wildlife Species		
California quail	*Callipepla californica*	N
Turkey vulture	*Catharses aura*	N
Lark sparrow	*Chondestes grammacus*	N
American crow	*Corvus brachyrhynchos*	N
House finch	*Haemorhous mexicanus*	N
Acorn woodpecker	*Melanerpes formicivorus*	N
California towhee	*Melozone crissalis*	N
Northern mockingbird	*Mimus polyglottos*	N
Northern rough-winged swallow	*Stelgidopteryx serripennis*	N
Western kingbird	*Tyrannus vericalis*	N
Botta's pocket gopher	*Thomomys bottae*	N
Western fence lizard	*Sceloporus occidentalis*	N
California sister butterfly	*Adelpha californica*	N
European honeybee	*Apis mellifera*	I
Yellow-faced bumblebee (?)	*Bombus vosnesenskii*	N
Orange sulphur butterfly	*Colias eurtheme*	N
Andre's harvester ant	*Veromessor andrei*	N
Dragonfly	*Unknown*	N
Grasshopper	*Unknown*	N
Wing-tapping cicada species	*Unknown*	N
Plant Species		
Silver hairgrass	*Aira caryophyllea*	I
Bur chervil	*Anthriscus caucalis*	I
Madrone	*Arbutus menziesii*	N
Whiteleaf manzanita	*Arctostaphylos viscida*	N
Wild oat	*Avena fatua*	I
Coyote brush	*Baccharis pilularis*	N
Rattlesnake grass	*Briza maxima*	I
Harvest brodiaea	*Brodiaea elegans*	N
Ripgut brome	*Bromus diandrus*	I
Softchess	*Bromus hordeaceus*	I
Cheatgrass	*Bromus tectorum*	I
Northern catalpa	*Catalpa speciosa*	I
Field bindweed	*Convolvulus arvensis*	I
Bermuda grass	*Cynodon dactylon*	I
Tall flatsedge	*Cyperus eragrostis*	N
Wild carrot	*Daucus pusillus*	N
Medusa head	*Elymus caput-medusae*	I

Common Name	Scientific Name	Native (N) / Introduced (I)
Yerba santa	*Eriodictyon californicum*	N
White-stemmed filaree	*Erodium brachycarpum*	I
Common fig	*Ficus carica*	I
Toyon	*Heteromeles arbutifolia*	N
Klamathweed	*Hypericum perforatum*	I
Northern California black walnut	*Juglans hindsii*	N
Common toad rush	*Juncus bufonius*	N
Prickly lettuce	*Lactuca serriola*	I
Scarlet pimpernel	*Lysimachia arvensis*	I
Harding grass	*Phalaris aquatica*	I
Ribwort	*Plantago lanceolata*	I
Valley oak	*Quercus lobata*	N
Black oak	*Quercus kelloggi*	N
Interior live oak	*Quercus wislizeni*	N
Himalayan blackberry	*Rubus armeniacus*	I
Common sheep sorrel	*Rumex acetosella*	I
Curly dock	*Rumex crispus*	I
Elderberry	*Sambucus mexicana*	N
Willow species	*Salix* sp.	N
Common dandelion	*Taraxacum officinale*	I
Poison oak	*Toxicodendron diversilobum*	N
California wild grape	*Vitis californica*	N
Cultivated grape	*Vitis vinifera*	I
Lichen species	*Unknown*	Unknown

Attachment B-4

SPECIAL-STATUS SPECIES OCCURRENCE POTENTIAL IN THE PROJECT VICINITY

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Plants			
Alisma gramineum **Grass alisma**	2B.2 / S3	Perennial herb; blooms Jun-Aug. Freshwater ponds, shallow; 1,280-5,905 ft. elev.; Modoc Plateau and Warner Mountains (northeast California).	**Not likely to occur.** The Survey Area is outside the species' elevation and geographic range; lacks suitable pond habitat to support this species.
Allium peninsulare var. *franciscanum* **Franciscan onion**	1B.2 / S2	Perennial herb; blooms May-Jun. Dry hillsides in clay, volcanic, or serpentine (often) in cismontane woodland, valley and foothill grassland; 170-1,00 ft. elev.; Central Coast, San Francisco Bay Area.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable clay, volcanic, or serpentine soils to support this species.
Arctostaphylos stanfordiana ssp. *raichei* **Raiche's manzanita**	1B.1 / S2	Shrub; blooms Feb-Apr. Rocky, often serpentine, slopes and ridges in chaparral and openings of lower montane coniferous forest; 1,475-3,395 ft. elev.; Inner North Coast Ranges in Lake and Mendocino Cos.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable chaparral or conifer forest habitat to support this species.
Astragalus breweri **Brewer's milkvetch**	4.2 / S3	Annual herb; blooms Apr-Jun. Meadows, often in serpentine, in chaparral, cismontane woodland, valley and foothill grassland; 295-2,395 ft. elev.; North Coast, San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks suitable meadow habitat or serpentine soils to support this species.
Blennosperma bakeri **Sonoma sunshine**	FE / SE / 1B.1 / S1	Annual herb; blooms Mar-May. Vernal pools and swales in valley and foothill grassland; 35-360 ft. elev.; Outer North Coast Ranges, San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat.
Brasenia schreberi **Watershield**	2B.3 / S3	Perennial herb; blooms Jun-Sep. Obligate aquatic species of freshwater water ponds and streams, both natural and artificial; requires water depth of less than 1.5 m (4.9 ft), constant water level, thick layer of bottom sediment; under 7,220 ft. elev.; broad distribution in northern California including North Coast and Klamath ranges, and Sacramento Valley	**Not likely to occur.** The proposed Project Area lacks suitable aquatic habitat to support this species. Intermittent Stream-1 located in Survey Area ~280 ft. southeast of proposed Project area lacks the perennial presence of surface water required to support this species.
Bruchia bolanderi **Bolander's bruchia**	4.2 / S3	Moss. Damp soils (meadows and seeps) in lower/upper montane coniferous forest; 5,580-9,185 ft. elev. In California, primarily occurs in Sierra Nevada; also occurs in high elevations in Oregon, Nevada, Utah.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable meadow/seep habitat to support this species.
Carex comosa **Bristly sedge**	2B.1 / S2	Perennial herb; blooms May-Sep. Obligate aquatic of lake margins (marshes and swamps) in coastal prairie and valley and foothill grassland; under 2,050 ft. elev.; broad distribution in California including Klamath, North Coast, and Cascade ranges.	**Not likely to occur.** The Survey Area lacks suitable marshy/swampy lake margin habitat to support this species.
Ceanothus gloriosus var. *exaltatus* **Glory brush**	4.3 / S4	Shrub; blooms Mar-Aug. Sandy or rocky substrates in chaparral; 100-2,000 ft. elev.; Outer North Coast Range, San Francisco Bay Area.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable sandy or rocky soils to support this species.
Ceanothus pinetorum **Kern ceanothus**	4.3 / S3	Shrub; blooms May-Jul. Rocky or granitic slopes, ridges, flats in lower/upper montane coniferous forest, subalpine coniferous forest; 3,410-9,005 ft. elev.; primarily known from southern High Sierra Nevada and Klamath Ranges; records in North Coast Ranges and San Francisco Bay Area need more study to confirm correct species identification.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable conifer forest habitat to support this species.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Cryptantha excavata **Deep scarred cryptantha**	1B.1 / S1	Annual herb; blooms Apr-May. Sandy, gravelly, dry streambanks in cismontane woodland; 330-,640 ft. elev.; southern Inner North Coast Ranges in Wilbur Springs, Bear Creek Canyon, and Cache Creek Canyon areas.	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Cuscuta jepsonii **Jepson's dodder**	1B.2 / S3	Annual vine (parasitic); blooms Jul-Sep. Grows on *Ceanothus diversifolius* and *Ceanothus prostrates* in broadleaf upland forest and lower/upper montane coniferous forests; 3,940-7,550 ft. elev.; Klamath, North Coast, Cascade, and Sierra Nevada ranges.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable broadleaf or conifer forest habitat to support this species.
Cypripedium californicum **California lady's-slipper**	4.2 / S4	Perennial herb; blooms Apr-Aug. Seeps, bogs/fens, streambanks, usually serpentine soils, in lower montane coniferous forest; 100-9,025 ft. elev.; Klamath, North Coast (excluding Inner North Coast), Cascade, and Sierra Nevada Ranges.	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Cypripedium montanum **Mountain lady's-slipper**	4.2 / S4	Perennial herb; blooms Mar-Aug. Moist areas and dry slopes in broad-leafed upland forest, cismontane woodland, lower montane and North Coast coniferous forest; 605-7,300 ft. elev.; Klamath, North Coast, and Cascade ranges, north and central Sierra Nevada, San Francisco Bay Area, Modoc Plateau and Warner Mountains.	**Low.** The Survey Area contains suitable montane woodland habitat to support this species; however, the portion overlapping the proposed Project area and immediately adjacent to the east is moderately disturbed and is dominated by non-native species in the herbaceous strata, therefore, this species has a very low potential to be present. No database records within 5 miles; nearest are historic CNPS records ~7.5 miles south of Survey Area.
Erythranthe nudata **Bare monkeyflower**	4.3 / S4	Annual herb; blooms May-Jun. Seeps on serpentine outcrops in chaparral and cismontane woodland; 655-2,295 ft. elev.; North Coast Ranges.	**Not likely to occur.** The Survey Area lacks suitable seep or serpentine outcrop habitat to support this species.
Fritillaria agrestis **Stinkbells**	4.2 / S3	Perennial herb; blooms Mar-Jun. Clay, often vertic, occasionally serpentine soils, in chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; 35-5,100 ft. elev.; Great Valley, Central Coast, South Coast Ranges, San Francisco Bay Area, Sierra Nevada Foothills, and Outer North Coast Range.	**Not likely to occur.** The Survey Area lacks required clay or serpentine soils to support this species.
Fritillaria purdyi **Purdy's fritillary**	4.3 / S4	Perennial herb; blooms Mar-Jun. Serpentine soils in chaparral, cismontane woodland, lower montane coniferous forest; 570-7,400 ft. elev.; North Coast, North Coast and Klamath ranges.	**Not likely to occur.** The Survey Area lacks required serpentine soils to support this species.
Fritillaria roderickii **Roderick's fritillary**	SE / 1B.1 / S1	Perennial herb; blooms Mar-May. Grassy slopes and mesas in coastal bluff scrub, coastal bluff scrub, valley and foothill grassland; sometimes serpentine; 50-1,310 ft. elev.; CNPS states plants introduced in Mendocino (Booneville area) and Sonoma counties; North Coast.	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Gilia capitata ssp. *pacifica* **Pacific gilia**	1B.2 / S2	Annual herb; blooms Apr-Aug. Steep slopes, ravines, open flats, or coastal bluffs, grassland, dunes; 15-5,465 ft. elev.; North Coast, and Klamath and Outer North Coast ranges.	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Grimmia torenii **Toren's grimmia**	1B.3 / S2	Moss. Openings, rocky, boulder and rock walls with serpentine or volcanic soils in chaparral, cismontane woodland, lower montane coniferous forest; 1,065-3,805 ft. elev. Inner North Coast, Outer South Coast, and Klamath ranges, San Francisco Bay Area.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable serpentine or volcanic soils to support this species.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Hemizonia congesta ssp. *calyculata* **Mendocino tarplant**	1B.2 / S2	Annual herb; blooms Apr-Nov. Clay soils, sometimes serpentinite, in cismontane woodland and valley and foothill grassland; 740-4,595 ft. elev.; North Coast Ranges.	**Not likely to occur.** The Survey Area lacks required clay or serpentine soil types to support this species.
Hemizonia congesta ssp. *tracyi* **Tracy's tarplant**	4.3 / S4	Annual herb; blooms May-Nov. Openings, sometimes serpentinite, in coastal prairie, lower montane and North Coast coniferous forest; 395-3,935 ft. elev.; North Coast (Cape Mendocino; Humboldt Co.) and Outer North Coast Range.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable prairie or conifer forest habitat to support this species.
Hesperolinon adenophyllum **Glandular western flax**	1B.2 / S2S3	Annual herb; blooms May-Aug. Serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 490-4,15 ft. elev.; North Coast Ranges.	**Not likely to occur.** The Survey Area lacks required serpentine soil types to support this species.
Horkelia bolanderi **Bolander's horkelia**	1B.2 / S2	Perennial herb; blooms Jun-Aug. Edges of vernally wet places in lower montane coniferous forest, chaparral, valley and foothill grassland; 1,475-3,610 ft. elev.; Inner North Coast Ranges, primarily south and east of Clear Lake, Lake County.	**Not likely to occur.** The Survey Area is outside the species' elevation range.
Lasthenia burkei **Burke's goldfields**	FE / SE / 1B.1 / S1	Annual herb; blooms Apr-Jun. Meadows, vernal pools, seeps in foothill woodland; 50-1,970 ft. elev.; Inner North Coast Ranges; S Mendocino, S Lake, NE Sonoma Counties.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable meadow or seep habitat to support this species.
Lasthenia conjugens **Contra Costa goldfields**	FE / 1B.1 / S1	Annual herb; blooms Mar-Jun. Vernal pools and wet meadows in cismontane woodland, valley and foothill grassland; under 1,540 ft. elev.; North, Central, South Coasts, Outer North Coast Ranges, Sacramento Valley (Napa and Sonoma Cos), San Francisco Bay.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable meadow habitat to support this species.
Layia septentrionalis **Colusa layia**	1B.2 / S2	Annual herb; blooms Apr-May. Serpentine (often) or sandy soils in chaparral, cismontane woodland, valley and foothill grassland; 330-3,595 ft. elev.; central and south Inner North Coast Ranges (southeast of Ukiah) and Sacramento Valley (Sutter Buttes).	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks required serpentine or sandy soil types to support this species.
Leptosiphon aureus **Bristly leptosiphon**	4.2 / S4	Annual herb; blooms Apr-Jul. Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; 180-4,920 ft. elev.	**Low.** The Survey Area contains suitable grassland habitat to support this species; however, the grassland habitat is heavily disturbed and is dominated by non-native plant species, therefore, this species has a very low potential to be present. Two CNPS occurrences within 5 miles, both older than 20 years, nearest is ~3.4 miles southeast of Survey Area.
Leptosiphon grandiflorus **Large-flowered leptosiphon**	4.2 / S3S4	Annual herb; blooms Apr-Aug. Open, grassy flats with generally sandy soils in coastal dunes/prairie/scrub, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, valley and foothill grassland; 15-4,005 ft. elev.; North and Central Coasts, San Francisco Bay Area, Inner and South Coast Ranges.	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Leptosiphon latisectus **Broad-lobed leptosiphon**	4.3 / S4	Annual herb; blooms Apr-Jun. Open or partially shaded grassy slopes in broad-leafed upland forest, cismontane woodland; 560-4,920 ft. elev.; North Coast Ranges.	**Low**. The Survey Area contains suitable cismontane woodland to support this species; however, the portion over-lapping the proposed Project area and immediately adjacent to the east is moderately disturbed and contains large amounts of non-native species in the herbaceous strata, therefore, there is a very low potential for this species to be present. No database records within 5 miles; nearest is historic CNPS record ~7.5 miles south of Survey Area.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Lilium rubescens **Redwood lily**	4.2 / S3	Perennial bulb; blooms Apr-Aug; Sometimes serpentine soils or roadsides in chaparral, broadleaf upland forest, lower/upper montane coniferous forest, and North Coast coniferous forest; 100-6,270 ft. elev.; North Coast, Klamath and North Coast Ranges, San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks suitable chaparral, broadleaf forest, or conifer forest habitat to support this species.
Limnanthes bakeri **Baker's meadowfoam**	SR / 1B.1 / S1	Annual herb; blooms Apr-May. Meadows, freshwater marsh margins, vernal pools in valley and foothill grassland; 575-2,985 ft. elev.; central Outer North Coast Ranges (near Willits, Mendocino Co.).	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable meadow or marsh habitat to support this species.
Malacothamnus mendocinensis **Mendocino bush-mallow**	1B.1 / S1	Shrub; blooms Jun-Aug. Open, rocky areas and roadsides in chaparral and cismontane woodland; 705-755 ft. elev.; known from only two historical collections near Ukiah (last 1939), thought to be extinct until rediscovered at Lake Mendocino; primary threat is lack of germination due to lack of wildfire.	**Low.** The Survey Area contains suitable roadside areas in cismontane habitat; unknown if soils are sufficiently rocky to support this species. The portion of woodland overlapping the proposed Project Area and immediately adjacent to the east is moderately disturbed and contains large amounts of poison oak, California wild grape, and Himalayan blackberry in the understory; therefore, there is a very low potential for this species to be present. One 2016 CNDDB record ~3 miles southeast of Survey Area.
Navarretia leucocephala ssp. *bakeri* **Baker's navarretia**	1B.1 / S2	Annual herb; blooms Apr-Jul. Meadows, vernal pools and swales in cismontane woodland, lower montane coniferous forest, valley and foothill grassland; adobe or alkaline soils; 15-5,710 ft. elev.; Klamath, High Cascade, and North Coast Ranges, western Sacramento Valley, northern San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable meadow habitat to support this species.
Perideridia gairdneri ssp. *gairdneri* **Gairdner's yampah**	4.2 / S3S4	Perennial herb; blooms Jun-Oct. Vernal pools in broad-leafed upland forest, chaparral, coastal prairie, valley and foothill grassland; under 2,000 ft. elev.; southern North Coast (Sonoma Co.), North Coast Ranges, Central Coast (scarce south of Monterey Co.), South Coast	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat.
Piperia candida **White-flowered rein orchid**	1B.2 / S3	Perennial herb; blooms May – Sep. Forest duff, mossy banks, rock outcrops, and muskeg in broad-leafed upland forest, lower montane and North Coast coniferous forest; sometimes on serpentine; 100-4,300 ft. elev.; North Coast, Klamath and North Coast Ranges, southwest San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks suitable broad-leaf or conifer forest habitat to support this species.
Plagiobothrys lithocaryus **Mayacamas popcornflower**	1A / SX	Annual herb; blooms Apr-May. Moist sites in chaparral, cismontane woodland, valley and foothill grassland; 985-1,475 ft. elev.; valleys near Mayacamas Mountains (south of Mendocino Range, west of Clear Lake, east of Ukiah) in southern Inner North Coast Range.	**Not likely to occur.** CNPS presumes this species to be extinct in California. The Survey Area is outside the species' elevation and geographic range.
Pleuropogon californicus var. *davyi* **Davy's semaphore grass**	4.3 / S3	Perennial herb; blooms Mar-Jun. Vernal pools, sloughs, meadows in cismontane woodland, lower montane coniferous forest; 490-2,000 ft. elev.; inner and outer North Coast Ranges.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable slough or meadow habitat to support this species.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Pleuropogon hooverianus **North Coast semaphore grass**	ST / 1B.1 / S2	Perennial herb; blooms Apr-Jun. Meadows and vernal pools in broad-leafed upland forest and North Coast coniferous forest; 35-2,200 ft. elev.; southern North Coast, Inner and Outer North Coast Ranges, northern San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat; also lacks suitable meadow habitat to support this species.
Potamogeton epihydrus **Nuttall's ribbon-leaved pondweed**	2B.2 / S2S3	Perennial herb; blooms Jul-Sep. Shallow freshwater marsh; 1,210-7,125 ft. elev.; Outer North Coast and Sierra Nevada ranges, Modoc Plateau.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable marsh habitat to support this species.
Ramalina thrausta **Angel's hair lichen**	2B.1 / S2S3	Lichen. On dead twigs and other lichens in North Coast coniferous forest; 245-1,410 ft. elev.; Central Coast (Monterey Co.), North Coast, Outer North Coast Ranges.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable conifer forest habitat to support this species.
Ranunculus lobbii **Lobb's aquatic buttercup**	4.2 / S3	Annual herb; blooms Feb-Mar. Vernal pools in cismontane woodland, North Coast coniferous forest, valley and foothill grassland; 50-1,540 ft. elev.; North Coast Ranges, San Francisco Bay Area.	**Not likely to occur.** The Survey Area lacks required soil types to support suitable vernal pool/swale habitat.
Silene bolanderi **Bolander's catchfly**	1B.2 / S2	Perennial herb; blooms May-Jun. Usually grassy openings, sometimes dry rocky slopes, canyons, or roadsides in chaparral (edges), cismontane woodland, lower coniferous forest, North Coast coniferous forest; sometimes serpentinite; 1,380-3,775 ft. elev.; Outer North Coast Ranges.	**Not likely to occur.** The Survey Area is outside the species' elevation and geographic range.
Streptanthus glandulosus ssp. *hoffmanii* **Hoffman's bristly jewelflower**	1B.3 / S2	Annual herb; blooms Mar-Jul. Moist, steep rocky banks, in serpentine and non-serpentine soil in chaparral, cismontane woodland, valley and foothill grassland; 395-1,560 ft. elev.; southwest Outer North Coast Ranges (between Ukiah and Santa Rosa).	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable moist, steep rocky banks to support this species.
Tracyina rostrata **Beaked tracyina**	1B.2 / S2	Annual herb; blooms May-Jun. Grassy slopes in chaparral, cismontane woodland, valley and foothill grassland; 295-4,165 ft. elev.	**Low.** The Survey Area is within species' range, contains grassland habitat with gentle slope (less than 3%); however, the portion overlapping the proposed Project Area and immediately adjacent to the east is moderately disturbed and contains large amounts of non-native species in the herbaceous strata; therefore, there is a very low potential for this species to be present. One CNPS record from 2018 ~3.9 miles to the NE.
Trichodon cylindricus **Cylindrical trichodon**	2B.2 / S2	Moss. On sandy or sometimes clay soil in exposed situations, often in disturbed sites, along roadside banks, trails, fields, or streambanks in coastal scrub, grassland, broad-leafed upland forest, upper montane coniferous forest; 165-6,570 ft. elev.; northern High Sierra Nevada (Plumas and Sierra counties), North Coast Ranges (Humboldt, Mendocino, Glenn counties), North Coast (Humboldt Co.), Klamath Ranges (Siskiyou Co.), southern High Sierra Nevada (Tulare Co.).	**Low**. The Survey Area provides suitable grassland, disturbed areas, and roadside banks to support this species. However, areas containing suitable habitat lack the species' preferred sandy or clay soil types; therefore, there is very low potential for this species to be present. No database records within 5 miles; nearest is 2019 CNDDB record ~18 miles northeast of Survey Area.
Trifolium amoenum **Showy Indian clover**	FE / 1B.1 / S1	Annual herb; blooms Apr-Jun. Moist, heavy soils (sometimes serpentinite), disturbed areas in coastal bluff scrub, valley and foothill grassland; 15-1,360 ft. elev.; southern North Coast	**Not likely to occur.** The Survey Area is outside the species' geographic range.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
		Ranges (as far north as Santa Rosa), northern Central Coast (as far south as San Jose), San Francisco Bay Area.	
Trifolium buckwestiorum **Santa Cruz clover**	1B.1 / S2	Annual herb; blooms Apr-Oct. Gravelly margins along habitat edges in broad-leafed upland forest, cismontane woodland, coastal prairie; 115-2,000 ft. elev.; southwestern San Francisco Bay Area (Monterey and Santa Cruz counties), Point Arena area (Mendocino Co).	**Not likely to occur.** The Survey Area is outside the species' geographic range.
Trifolium hydrophilum **Saline clover**	1B.2/ S2	Annual herb; blooms Apr-Jun. Salt marshes and open areas with alkaline soils in valley and foothill grassland; under 985 ft. elev.; Great Valley, Central Western California region.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks required alkaline soil types to support this species.
Usnea longissima **Methuselah's beard lichen**	4.2 / S4	Lichen. Grows in the "redwood zone" on tree branches of a variety of trees, including big leaf maple, oaks, ash, Douglas-fir, and bay; 165-4,790 ft. elev.	**Not likely to occur.** The Survey Area is outside the species' geographic range; lacks suitable redwood, conifer, or broad-leaf forest habitat to support this species.
Wyethia longicaulis **Humboldt County wyethia**	z.3 / S4	Perennial herb; blooms May-Jul. Open areas, sometimes roadsides, in broad-leafed upland forest, coastal prairie, lower montane coniferous forest; 2,460-5,005 ft. elev.; Klamath and North Coast Ranges.	**Not likely to occur.** The Survey Area is outside the species' elevation range; lacks suitable prairie, broad-leaf, or conifer forest habitat to support this species.
Invertebrates			
Danaus plexippus plexippus **Monarch butterfly**	FC / S2	Occur throughout North America in fields, roadside, open, and wet areas or urban gardens where milkweed and flowering plants are present. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they can only lay eggs on milkweed plants. Monarchs living west of the Rocky Mountain range in North America primarily overwinter in California at sites along the Pacific Coast, roosting in eucalyptus, Monterey pines, and Monterey cypress trees.	**Not likely to occur (over-wintering).** The Survey Area is outside the over-wintering range of species; lacks over-wintering habitat. **Low (breeding, migration).** The grassland and woodland present in the Survey Area could support milkweed species (*Asclepias*) required for reproduction, and other flowering species used for nectaring. No database records within 5 miles; nearest is 2022 iNaturalist record ~5.8 miles south of Survey Area.
Bombus caliginosus **Obscure bumble bee**	S1S2	Grassy coastal prairies and Coast Range meadows. Nests underground (often abandoned rodent nests) and above ground (abandoned bird nests, grassy tufts, rock piles, dead tree cavities). Pacific coast from southern California north to British Columbia. More surveys are needed to confirm if still present in historic range.	**Moderate.** The Survey Area contains disturbed (mowed) non-native grassland habitat, potentially suitable burrows present (Botta's pocket gopher). Survey Area provides some suitable floral resources not observed in bloom, including Himalayan blackberry, whiteleaf manzanita; large patches of Klamath weed observed in bloom during site visits. Project is within historic range where species may be extirpated (more research needed). No database records within 5 miles; nearest record is 1954 CNDDB record ~18 miles northwest of Survey Area
Bombus occidentalis **Western bumble bee**	SC / S1	Meadows and grassland with abundant floral resources. Nests underground rodent burrows in open west-southwest slopes bordered by trees. Range likely currently restricted to high elevation sites in Sierra Nevada; few scattered observations along California coast	**Moderate.** The Survey Area contains disturbed (mowed) non-native grassland and woodland habitat with herbaceous strata dominated by non-native species, potentially suitable burrows present (Botta's pocket gopher). Survey Area provides some potentially suitable floral resources not observed in bloom, including Himalayan blackberry, whiteleaf manzanita; large patches of Klamath weed observed in bloom during site visits. Project is within historic range where species may be extirpated (more research needed). No database records within 5 miles; nearest record is 1949 CNDDB record ~11.5 miles southeast of Survey Area.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Gonidea angulate **Western ridged mussel**	S2	Found more often in streams than lakes and prefers constant water flow and well-oxygenated stable substrates in areas of low gradient. They can be found in substrates ranging in size from silt, clay, and sand to boulders. They are rarely found in waters that are continuously turbid such as glacial streams. California, Oregon, Washington, Idaho, Nevada and British Columbia.	**Not likely to occur.** The Survey Area lacks suitable perennial stream, river, or lake habitat to support this species. Intermittent Stream-1 located within the Survey Area, ~280 feet southwest of the proposed Project area, is characterized as intermittent.
Noyo intersessa **Ten-mile shoulderband**	S1S2	Very little is currently understood about this species' life history and geographic range. iNaturalist observations are concentrated within the "redwood zone" in Mendocino County.	**Moderate**. The Survey Area contains interior live oak woodland and valley oak riparian woodland that may support this species. Nearest iNaturalist observation is ~4.5 miles southwest of the Project in oak woodland/savannah.
Fish			
Entosphenus tridentatus **Pacific lamprey**	SSC / S3	Similar to salmonids, this species requires different habitats depending on its life stage. Prefers colder water with moderate to slower velocities. Adults will build nests in gravel areas that have canopy cover, gravel and cobble substrates, vegetation, and woody debris. Generally enter freshwater April-June, but can occur in winter. Spawning generally occurs April-July. In California, primarily occurs in river basins (below dams) in Central Valley, Central Coast, and northwest region including the Russian River watershed.	**Not likely to occur.** The proposed Project area lacks aquatic habitat suitable to support this species. Intermittent Stream-1 located ~280 feet southeast in the Survey Area is small (3-4 feet wide) and unlikely to contain flowing water late enough in spring/summer to support egg/ammocoete/juvenile development; downstream Intermittent Stream-2 was dry at time of June/July site visits.
Hysterocarpus traskii lagunae **Clear Lake tule perch**	SSC / S3	Confined to Clear Lake and Upper and Lower Blue Lakes in Lake County. Tend to occupy areas with aquatic and overhanging vegetation for cover.	**Not likely to occur.** The Survey Area is located outside the geographic range of this species. The proposed Project Area lacks suitable lake habitat to support this species.
Mylopharodon conocephalus **Hardhead**	SSC / S3	Large cyprinid species. Typically found in undisturbed areas of larger middle- and low-elevation streams but also occur in reservoirs; prefer temperatures between ~62°F (17°C) and 69°F (21°C) and relatively intolerant of low oxygen levels; prefer clear, deep (more than 3 feet) pools with sand-gravel-boulder substrates and slow water velocities. Occurs in low- to mid-elevation streams, rivers, some reservoirs in the main Sacramento-San Joaquin drainage and Russian River drainage; also Pit River drainage in Modoc County.	**Not likely to occur.** The proposed Project Area lacks aquatic habitat suitable to support this species. Intermittent Stream-1 located ~280 feet southeast in the Survey Area is small (3-4 feet wide) and unlikely to contain flowing water late enough in spring/summer to support egg/ammocoete/juvenile development; downstream Intermittent Stream-2 was dry at time of June/July site visits.
Oncorhynchus kisutch **Coho salmon – Central California Coast ESU**	FE / SE / S2	Depending on life stage, can be found in freshwater rivers, streams, estuaries, and marine environments. Adults spawn in shaded freshwater streams with cool to cold temperatures (optimal between 53°F [12°C] and 57°F [14°C]), typically at the head of a riffle with abundant medium to small size gravel. Spawning generally November through January; fry emergence generally March through June. Occurs in coastal river basins from Punta Gorda (Humboldt Co.) south to Aptos Creek (Santa Cruz Co.).	**Low**. The proposed Project Area lacks aquatic habitat suitable to support this species. The Intermittent Stream-1 located ~280 feet southeast in the Survey Area is likely to contain flowing surface water during this species' spawning period; however, due to intermittent nature of flows and its small (~3-4 ft wide) channel, not likely to contain sufficient riffle habitat water flow, cool temperatures, or dissolved oxygen levels to support to support spawning and egg/fry development; downstream Intermittent Stream-2 was dry at time of June/July site visits. One iNaturalist observation ~6 miles southwest of Survey Area; nearest CNDDB observation is unprocessed record ~20 miles west southwest.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Oncorhynchus mykiss irideus **Steelhead – Central California Coast DPS**	FT / S3	Depending on life stage, can be found in freshwater rivers, streams, estuaries, and marine environments. Adults prefer freshwater systems with cool temperatures (between ~59°F [15°C] and 64°F [18°C]), at least 7 inches deep, with moderate to low water velocity. During spawning, adults prefer freshwater streams or lakes with low velocity. Juveniles move into deeper and more vigorous waters as they grow. Winter run steelhead type; typically immigrate to freshwater December through April and spawn soon after; fry emergence December through mid-April. Occurs in river basins from Russian River (Mendocino Co.) south to Aptos Creek (Santa Cruz Co.), and east to Chipps Island at Sacramento and San Joaquin River confluence.	**Low.** The proposed Project Area lacks aquatic habitat suitable to support this species. Intermittent Stream-1 located ~280 feet southeast in the Survey Area is likely to contain flowing surface water during this species' spawning period; however, due to intermittent nature of flows and its small (~3-4 ft wide) channel, not likely to contain sufficient riffle habitat water flow, cool temperatures, or dissolved oxygen levels to support to support spawning and egg/fry development; downstream Intermittent Stream-2 was dry at time of June/July site visits. There are three unprocessed CNDDB occurrences for this DPS within the Russian River, nearest is ~0.4 miles northwest of Survey Area.
Oncorhynchus mykiss irideus **Steelhead – Northern California DPS**	Summer-run FT / SE / S2; Winter-run FT / S3	Depending on life stage, can be found in freshwater rivers, streams, estuaries, and marine environments. Adults prefer freshwater systems with cool temperatures (Summer Run up to ~73°F [23°C], Winter Run up to ~62°F [17°C]), at least 7 inches deep, with moderate to low water velocity. During spawning, adults prefer freshwater streams or lakes with low velocity. Juveniles move into deeper and more vigorous waters as they grow. Summer steelhead typically immigrate to freshwater May through October then spawn January and February; winter steelhead typically immigrate December through April and spawn soon after. Occurs in California coastal river basins from Redwood Creek (Humboldt Co.) south to Gualala River (Mendocino Co.), not including Russian River.	**Not likely to occur.** The Survey Area is located outside the geographic range of this species DPS.
Oncorhynchus tshawytscha **Chinook salmon – California Coastal ESU**	FT / S2	Depending on life stage, can be found in freshwater rivers, streams, estuaries, and marine environments. Adults spawn in freshwater systems with cool temperatures (between ~42°F [5.6°C] and 57°F [13.9°C]), in loose gravel clean of fine sediment in swift, relatively shallow riffles or along the edges of fast runs, depths greater than 9 inches; typically in larger streams and rivers. Spawning generally occurs within a few weeks of adults entering freshwater between August and January; fry emergence December through mid-April. Juveniles move into deeper and more vigorous waters as they grow. Occur in rivers and streams south of the Klamath River to the Russian River.	**Not likely to occur**. The proposed Project Area lacks aquatic habitat suitable to support this species. Intermittent Stream-1 located ~280 feet southeast in the Survey Area is likely to contain flowing surface water during this species' spawning period; however, due to its small (~3-4 ft. wide) channel, not likely to contain sufficient suitable riffle habitat to support spawning and egg/fry development.
Amphibians			
Dicamptodon ensatus **California giant salamander**	SSC / S2S3	Wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages. Found in two (possibly three) isolated regions from near Point Arena (Mendocino County) east into the coast ranges of Lake and Glenn counties, south to southern Santa Cruz County.	**Not likely to occur.** The Survey Area is outside the species' geographic range. Proposed Project area lacks suitable wet coastal forest habitat to support this species.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Rana boylii **Foothill yellow-legged frog (North Coast DPS/pop. 1)**	SSC / S4	Small tributary streams with perennial water adjacent to terrestrial riparian habitat. Known to hide in springs, seeps, pools, woody debris, root wads, undercut banks, clumps of sedges, and large boulders adjacent to pools. Breeding habitat characterized by wider, more sunlit mainstream channels. Breeding occurs April to early July after flows have slowed from winter runoff. Highly aquatic species with a home range of less than 200 feet. Occurs along the Pacific Coast to the western slopes of the Sierra Nevada and Cascade mountains.	**Low.** The proposed Project Area lacks suitable aquatic habitat to support this species and is beyond the species' home range distance from suitable aquatic habitat. Intermittent Stream-1 located ~280 feet southeast in the Survey Area provides marginally suitable stream habitat to support breeding activity of this species as it is small (~3-4 feet wide), has intermittent flow, unlikely to contain surface water into June/July, and has dense shaded riparian canopy; may potentially support non-breeding activity. Agricultural impoundment located ~660 feet southeast of Project does not provide suitable habitat to support this species. Six CNDDB records within 5 miles (one unprocessed), nearest ~2.4 miles to the NW at Baker Creek, intermittent stream. Seven iNaturalist records within 5 miles, nearest ~1.5 miles southeast in an unnamed/unmapped seasonal drainage along Lake Mendocino.
Taricha rivularis **Red-bellied newt**	SSC / S2	Streams and rivers in coastal woodlands and redwood forest (primarily). Adults live underground in root channels adjacent to breeding habitat in dry season. Requires rapid-flowing, perennial streams for breeding and larval development. Larvae retreat into vegetation and under stones during the day. Over-land home range is limited, within ~50 feet of aquatic breeding habitat. Occurs along the coast from near Bodega, Sonoma County to near Honeydew, Humboldt County, and inland to Lower Lake and Kelsey Creek, Lake County; disjunct population present in Santa Clara County.	**Not likely to occur.** The proposed Project Area lacks suitable perennial stream habitat to support this species. Intermittent Stream-1 located within the Survey Area, ~280 feet southwest of the proposed Project Area, is characterized as intermittent. The site does not support redwood forest.
Taricha torosa **Coast Range newt**	SSC / S4	Lives in terrestrial habitats, primarily cismontane woodlands, coastal scrub, and mixed chaparral; also known from annual grassland and mixed conifer types. Will migrate 1 km (~0.62 miles) to breed in ponds and slow-moving streams, typically between December and May with optimal peaks between February and April. During their first year, larvae normally metamorphose in summer or fall, or when water dries up. Adults seek cover most of the year under surface objects such as rocks and logs, or in mammal burrows, rock fissures, inside of bases of standing trees, or human-made structures such as wells. Occurs along the coast ranges of California, from Mendocino Co. south to Los Angeles Co.; disjunct population in Cuyumaca Mountains in San Diego Co.; also recorded along southern Sierra Nevada from Tulare Co. to Kern Co.	**Moderate.** The proposed Project Area contains suitable annual grassland habitat and the eastern edge of Power Block 1 overlaps/adjacent to suitable interior live oak woodland within terrestrial migration range of suitable aquatic habitat; Botta's pocket gopher burrows provide suitable refuge. Intermittent Stream-1 located ~280 feet southeast in the Survey Area provides suitable slow-moving (low gradient) stream breeding habitat to support this species, may not contain water for long enough for eggs/larvae to fully develop and metamorphose. A small human-made agricultural impoundment is present along the Intermittent Stream-2 ~660 feet southeast of the proposed temporary laydown area (within migration distance), provides suitable aquatic breeding habitat more likely to remain inundated for full development of larvae. No CNDDB observations within 5 miles; 16 iNaturalist observations within 5 miles, nearest is ~0.5 mile north of the Survey Area.
Reptiles			
Emys (=Actinemys) marmorata **Western pond turtle**	SSC / S3	Ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Need basking sites and upland habitat up to 0.5 kilometer (0.3 miles or 1,640 feet) from water for egg laying. In California where habitat is present.	**Moderate.** The proposed Project Area lacks suitable aquatic habitat to support this species but is within the typical home range distance from suitable aquatic habitat. Intermittent Stream-1 located ~280 feet southeast in the Survey Area, and downstream Intermittent Stream-2, provide marginally suitable (inter-mittent flow, dense shaded riparian canopy, steep banks) stream habitat to support this species. A small human-made agricultural impoundment is present along Intermittent Stream-2 ~660 feet southeast of the proposed

Species	Status	Lifeform and Habitat	Occurrence in Study Area
			temporary laydown area (within home range distance), provides more suitable aquatic habitat for this species. Five CNDDB (three unprocessed) and 3 iNaturalist occurrences within 5 miles; nearest is ~0.4 mile south in Russian River.
Birds			
Accipiter cooperi **Cooper's hawk**	WL / S4	Most common in forests and woodland habitats but can be found nesting and hunting in suburban parks and neighborhoods; will nest in dense patches of large pines, oaks, or Douglas-firs.	**High (nesting, foraging**). Suitable habitat present in Survey Area includes: interior live oak woodland overlapping/adjacent to proposed Power Block 1; valley oak riparian woodland in southeast edge of Survey Area; somewhat suitable habitat present at isolated trees in grassland of proposed Project Area, and ornamental landscaping/windrow trees on rural residential parcels in Survey Area. One iNaturalist and numerous eBird observations within 5 miles in past 20 years; nearest is 2021 eBird record ~0.9 miles west of Survey Area.
Accipiter gentilis **Northern goshawk**	SSC / S3	Mature, dense conifer and mixed-conifer-hardwood forest interspersed with meadows, other openings, and riparian, at middle to higher elevations. Near water. Elevation range ~2,000-10,000 ft.	**Not likely to occur (nesting, foraging).** The Survey Area is outside species' elevation range. The Survey Area lacks suitable conifer and mixed-conifer-hardwood forest habitat to support this species.
Accipiter striatus **Sharp-shinned hawk**	WL / S4	Nests in dense, even-aged single-layered forest canopy; usually in dense, pole, and small-tree stands of conifers, which are cool, moist, shaded, little ground-cover, near water. Forages in forest openings or edges. Breeds throughout California, including the northern half of the state; lesser extent in the mountains of southern California.	**Moderate (nesting, foraging**). The proposed Project Area overlaps/adjacent to suitable interior live oak woodland that extends east in Survey Area that could support this species. Valley oak riparian forest present in southeast of Survey Area also provides suitable habitat. One iNaturalist and numerous eBird observations within 5 miles in past 20 years; nearest is iNaturalist 2021 record ~0.5 mile northeast of Survey Area.
Agelaius tricolor **Tricolored blackbird**	ST / SSC / BCC / S2	Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not likely to occur (nesting, foraging).** The Survey Area is outside the species' range.
Ardea alba **Great egret**	S4	Lives in freshwater, brackish, and marine wetlands. During the breeding season they live in colonies in trees or shrubs with other waterbirds. It hunts in belly-deep or shallower water in marine, brackish, and freshwater wetlands, and sometimes in uplands. Ranging across the southeastern states and in scattered spots throughout the rest of the U.S. and southern Canada.	**Moderate (nesting).** The proposed Project Area does not contain suitable riparian trees or shrubs to support nesting for this species. The trees in the riparian habitat of Intermittent Stream-1 in the Survey Area ~280 feet southeast of the proposed Project Area provide suitable nesting habitat. **Moderate (foraging).** The proposed Project Area contains suitable annual grassland (upland) foraging habitat that could support this species. Intermittent Stream-1 in the Survey Area southeast of the proposed Project Area provides suitable foraging habitat in limited areas where riparian/in-channel vegetation is not as dense. One unprocessed CNDDB record of a nest site ~1 mile west; numerous eBird and iNaturalist records within 5 miles and past 20 years; nearest is 2022 eBird record ~1 mile west of the Survey Area.
Ardea Herodias **Great blue heron**	S4	Commonly found in shallow estuaries and fresh or saline emergent wetlands. Can also occur along riverine and rocky marine shores, in croplands, pastures, and in mountains above foothills. During the breeding season they live in colonies in secluded groves of tall trees near water. Primarily forage	**Moderate (nesting).** The proposed Project Area does not contain suitable riparian trees or shrubs to support nesting for this species. The trees in the riparian habitat of Intermittent Stream-1 in the Survey Area ~280 feet southeast of the proposed Project Area provide suitable nesting habitat.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
		freshwater or saltwater habitats, also forage in uplands such as grasslands and agricultural fields. Ranging throughout most of California.	**Moderate (foraging).** The proposed Project Area contains suitable annual grassland (upland) foraging habitat that could support this species. Intermittent Stream-1 in the Survey Area southeast of the proposed Project Area provides suitable foraging habitat in limited areas where riparian/in-channel vegetation is not as dense. Numerous eBird and iNaturalist records within 5 miles and past 20 years; nearest is 2020 iNaturalist record ~0.5 mile west of the Survey Area.
Athene cunicularia **Burrowing owl**	SSC / BCC / S2	Nests mainly in wildlife burrows, usually in open grassland or shrubland communities; forages in open habitats. Occurs in California through western U.S. and Mexico.	**Low (nesting, foraging)**. The Survey Area contains suitable annual grassland to support this species, but lacks suitable burrows to support nesting or roosting. Two iNaturalist records within 5 miles, nearest ~4.3 miles northwest of Survey Area.
Aquila chrysaetos **Golden eagle**	FP / S3	Open and semi open country featuring native vegetation across most of the Northern Hemisphere. They avoid developed areas and uninterrupted stretches of forest. Found primarily in mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest on cliffs and steep escarpments in grassland, chapparal, shrubland, forest, and other vegetated areas.	**Not likely to occur (nesting, foraging).** The Survey Area lacks suitable cliffs and steep escarpments habitat needed for nesting; and uninterrupted forest needed for foraging habitat to support this species.
Branta hutchinsii leucopareia **Cackling goose**	FD / WL / S3	Winter resident. Forage in freshwater marshes, saltmarshes, mudflats, meadows, and agricultural fields. Rest, bathe, and roost on lakes and reservoirs. Occur in far NW Del Norte Co., Central Valley, and San Francisco Bay Area.	**Not likely to occur (nesting, foraging).** The Survey Area is well outside species' range.
Buteo regalis **Ferruginous hawk**	WL / S3S4	Winter resident and migrant at lower elevations and open grasslands in Modoc Plateau, Central Valley, Coast Ranges. Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats.	**Not likely to occur (nesting).** Proposed Project area located well outside of known breeding range. **Moderate (foraging).** The Survey Area contains grassland habitat suitable for foraging. No iNaturalist observations within 5 miles; 7 eBird observations within the past 20 years, nearest being 2017 record ~0.9 miles northwest of Survey Area.
Buteo swainsoni **Swainson's hawk**	ST	Typical habitat is open desert, grassland, or cropland containing scattered large trees or small groves. Breeds in stands with few trees, often in juniper-sage flats, riparian areas, and oak savannah. Forages in adjacent grasslands or suitable ag fields/ livestock pastures. Breeding range throughout central valley and northeast part of California. Mostly migratory, some yearlong residents in Central Valley.	**Not likely to occur (nesting, foraging).** The Survey Area is well outside species' range.
Charadrius nivosus nivosus **Western snowy plover**	FT / SSC / S3	Found on sandy marine and estuarine shores during fall/winter. Uses same habitat for breeding, but majority of nesting appears to be on salt pond levees. Most extensive distribution on coasts, but found inland sporadically, and locally during breeding season.	**Not likely to occur (nesting, foraging).** The Survey Area is well outside species' range.
Circus hudsonius **Northern harrier**	SSC / BCC / S3	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegeta-tion often at edge of marshes. Permanent resident of coastal	**Not likely to occur (nesting).** The Survey Area located well outside of known breeding range.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
		areas and northeastern plateau. Breeds in Central Valley and Sierra Nevada; widespread winter migrant in suitable habitat.	**High (foraging).** The Survey Area contains grassland habitat suitable for foraging. One iNaturalist observation and numerous eBird observations within 5 miles and past 20 years, nearest is 2022 eBird record ~1 mile west of Survey Area.
Coccyzus americanus occidentalis **Yellow-billed cuckoo**	FT / SE / S1	Found in densely foliaged deciduous trees and shrubs, usually along riparian corridors, or in adjacent orchards. Requires large areas of riparian habitat, particularly cottonwood-willow riparian woodlands. Nests in same dense, humid, riparian cover. Fragmented breeding populations found across interior of California.	**Not likely to occur (nesting, foraging).** The Survey Area is well outside species' range. The valley oak riparian woodland present within the southeast edge of the Survey Area does not provide large enough riparian habitat for this species.
Contopus cooperi **Olive-sided flycatcher**	SSC / BCC / S1S2	Summer resident. Montane coniferous forest with trees over water or open terrain including mixed conifer, montane-hardwood-conifer, Douglas-fir, red fir, and lodgepole pine. Forages on insects in openings or along edges, using tall, prominent trees and snags as perches.	**Not likely to occur (nesting, foraging).** The Survey Area lacks suitable coniferous forest to support this species.
Cypseloides niger **Black swift**	SSC / BCC /S2	Summer resident. Nests on cliffs, often behind or beside permanent or semipermanent waterfalls. Forage on insects, typically high above the ground over forests and open areas. Breeds widely but locally throughout western North America. In California, breeds along the central coast, and Cascade, Sierra Nevada, Transverse ranges.	**Not likely to occur (nesting, foraging).** The Survey Area located well outside of known breeding range.
Elanus leucurus **White-tailed kite**	FP / S3S4	Typically nests in oaks and willows, either open-country trees growing in isolation or in forests or along edges; forages over open country. Throughout much of California in coastal and valley lowlands, rarely away from agricultural areas.	**High (nesting).** The trees in the riparian habitat of Intermittent Stream-1 in the Survey Area ~280 feet southeast of the proposed Project Area provide suitable nesting habitat; isolated trees in grassland of proposed Project Area and windrow of norther catalpa trees south of private road adjacent to proposed Power Block 2 also provides suitable nesting habitat. The proposed Project Area overlaps interior live oak woodland and contains isolated northern catalpa and valley oak trees within the grassland that also provide suitable nesting habitat. **High (foraging).** The Survey Area contains grassland habitat suitable for foraging. Two iNaturalist observations and numerous eBird observations within 5 miles and past 20 years, nearest is 2020 eBird record ~1 mile west of Survey Area.
Falco columbarius **Merlin**	WL / S3S4	Uncommon winter migrant. Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, early successional stages. Seldom found in heavily wooded areas or open deserts. Commonly feeds on shorebirds along shorelines in winter.	**Not likely to occur (nesting).** The Survey Area located well outside of known breeding range. **Moderate (foraging).** The Survey Area lacks preferred foraging habitat (shorelines) but contains grassland and is adjacent to oak woodland also suitable for foraging. Three iNaturalist observations and numerous eBird observations within 5 miles and past 20 years.
Falco peregrinus anatum **American peregrine falcon**	FD / SD / FP / BCC / S3S4	Requires cliffs and ledges for nesting, and can be found in open landscapes, along rivers and coastlines, and within cities. Feeds primarily on birds.	**Not likely to occur (nesting).** The Survey Area lacks suitable nesting habitat. **High (foraging).** The Survey Area contains suitable grassland and open woodland habitat that could support foraging activities of this species.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
			One iNaturalist observation and numerous eBird observations within 5 miles and past 20 years, nearest is 2021 eBird record ~0.6 miles southwest of Survey Area.
Haliaeetus leucocephalus **Bald eagle**	FD / SE / FP / S3	Large trees near lakes, reservoirs, and large rivers with abundant prey. Wintering birds most often near large concentrations of waterfowl or fish.	**Not likely to occur (nesting, foraging).** The Survey Area lacks suitable habitat to support this species.
Icteria virens **Yellow-breasted chat**	SSC / S4	Willow thickets and other thick riparian vegetation, including blackberry and wild grape, near water courses. Widespread in North America.	**Low (nesting, foraging).** The southeast area of the Survey Area contains limited dense/layered riparian habitat. Two unprocessed CNDDB records; numerous eBird records within 5 miles and past 20 years, nearest is 2020 record ~0.9 mile northwest of Survey Area.
Nannopterum auritum **Double-crested cormorant**	WL / S4	Colonial waterbirds that seek aquatic bodies big enough to support their mostly fish diet, such as rivers and lakes. However, they may roost and form breeding colonies on smaller lagoons or ponds, and then fly up to 40 miles to a feeding area. In addition to fishing waters, cormorants need perching areas for the considerable amount of time they spend resting each day.	**Not likely to occur (nesting, foraging).** The Survey Area lacks fish-filled aquatic suitable habitat to support this species. Nearest suitable foraging habitat is a small (~1 acre) human-made pond located ~670 feet southeast of the proposed Project Area.
Pandion haliaetus **Osprey**	WL / S4	Any expanse of shallow, fish-filled water, including rivers, lakes, reservoirs, lagoons, swamps, and marshes. Frequenting deep water only where fish school near the surface. Nest sites are in open surroundings for easy approach, usually on snags, dead-top trees, or crotches between large branches and trunks; sometimes on cliffs or human-built platforms. Nest in a wide variety of locations, from Alaska to New England, Montana to Mexico, Carolina to California; their habitat includes an adequate supply of accessible fish within a maximum of about 12 miles of the nest	**Low (nesting).** The proposed Project Area overlaps interior live oak woodland, extending east in Survey Area, that provides marginally suitable nesting habitat; riparian trees within the southeast portion of Survey Area provide some suitable nesting trees. **Not likely to occur (foraging).** The Survey Area lacks fish-filled aquatic suitable habitat to support this species. One CNDDB record from 2004 located ~1 mile southeast of the Project near Lake Mendocino. Numerous iNaturalist and eBird records within 5 miles.
Setophaga petachia **Yellow warbler**	SSC / S3	Primarily in willows, riparian thickets, and riparian trees such as cottonwood, sycamore, ash, and alder, especially near water, but also xeric montane shrub fields and shrubby understory of mixed-conifer forest. Breeds along Pacific coast from Alaska and Canada south to northern Baja California.	**Low (nesting, foraging).** The southeast area of the Survey Area contains limited dense/layered riparian habitat. One unprocessed CNDDB record; four iNaturalist and numerous eBird records within 5 miles and past 20 years, nearest is 2020 eBird record ~1 mile west of Survey Area.
Sphyrapicus ruber **Red-breasted sapsucker**	S4	Preferred nesting habitats include montane riparian, aspen, montane hardwood-conifer, mixed conifer, and red fir, especially near meadows, clearings, lakes, and slow-moving streams. Nests and roosts in tree cavity. Forages on insects in trunks of mostly hardwoods, sometimes conifers. Yearlong or summer (breeding) resident from Oregon border south in Coast Ranges and along coast to Marin Co.	**Low (nesting, foraging**). The proposed Project Area overlaps interior live oak woodland that extends east in Survey Area that could provide less-preferred, marginally suitable nesting and foraging habitat for this species; no potential nest/roost cavities detected during site visits. Valley oak riparian forest present in southeast area of Survey Area also provides somewhat suitable habitat. Unlikely to nest in small, isolated valley oaks or northern catalpa trees present in proposed Project area grassland. Three iNaturalist and numerous eBird observations within 5 miles and past 20 years, nearest is 2021 eBird record ~1 mile west of Survey Area.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Strix occidentalis caurina **Northern spotted owl**	FT / ST / S2	Primarily nests and forages in old growth coniferous forests, particularly Douglas fir, with dense canopy cover, logs, standing snags, open spaces for foraging, and live trees with broken tops. Ranging from southwestern British Columbia south into California to Marin County.	**Low (nesting).** Survey Area lacks preferred old growth conifer forest to support nesting activities of this species, but contains late-successional interior live oak woodland that provides marginally suitable nesting habitat for this species. **Moderate (foraging)**. Interior live oak woodland overlapping/adjacent to proposed Power Block 1 provides suitable foraging and dispersal habitat to support this species. Two CDFW BIOS Spotted Owl Viewer records within 5 miles, nearest is 2017 record ~0.8 mile northwest of Survey Area.
Mammals			
Antrozous pallidus **Pallid bat**	SSC / S3	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures and include rock crevices, mines, caves, tree hollows, buildings, bridges, and culverts. Very sensitive to disturbance of roosting sites. Forage primarily by gleaning. Occurs throughout California except for high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of California from Del Norte and western Siskiyou counties. to northern Mendocino Co.	**Moderate (roosting, foraging).** The Survey Area contains trees that could provide suitable day-roost habitat if crevices or cavities are present; no potentially suitable crevices/cavities in trees were detected during site visits. Trees are present in the interior live oak woodland overlapping the northeast part of the proposed Project Area extending east in Survey Area, valley oak riparian woodland in the southeast of Survey Area, and isolated trees within the grassland of proposed Project Area. Substation structures do not provide suitable roost habitat due to high level of disturbance. The Survey Area provides open habitat with insect activity suitable for foraging. One CNDDB record from 1947 ~4.75 miles east of Survey Area.
Arborimus pomo **Sonoma tree vole**	SSC / S2	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitat. Distributed along the North Coast from Sonoma County north to the Oregon border, being more or less restricted to the fog belt. Main predators include spotted owls but saw-whet owls and raccoons may also prey upon this species.	**Not likely to occur.** The Survey Area lacks suitable conifer forest habitat to support this species.
Bassariscus astutus **Ringtail**	FP	Rocky outcrops, canyons, or talus slopes located in deserts, chaparral; woodlands of oak, pinyon pine, and juniper; montane conifer forests; and especially riparian for the abundant prey. From sea level up to 9,500 ft. (2,900 m) but most common below 4,600 ft. Den in rock recesses, logs, tree hollows, and human-made enclosures. Found throughout northwestern California.	**Low**. The Survey Area lacks preferred habitat of rocky outcrops, canyons, or talus slopes but contains interior live oak woodland and valley oak woodland that provide somewhat suitable habitat. No CNDDB records within 9-quad literature search area; no iNaturalist records within 5 miles.
Corynorhinus townsendii **Townsend's big-eared bat**	SSC / S2	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings of caves, mines, buildings, and bridges; will also roost in rock crevices and hollow trees. Roosting sites limiting. Extremely sensitive to human disturbance. Forages in edge habitats along streams, adjacent to and within a variety of wooded habitats.	**Low (roosting, foraging).** The Survey Area contains trees that could provide suitable day-roost habitat if larger hollows or cavities are present; presence of suitable tree hollows/cavities is unknown. Trees are present in the interior live oak woodland overlapping the northeast part of the proposed Project Area extending east in Survey Area, valley oak riparian woodland in the southeast of Survey Area, and isolated trees within the grassland of proposed Project Area. Substation structures do not provide suitable roost habitat due to high level of disturbance. The Survey Area provides riparian and edge habitat with insect activity suitable for foraging. One CNDDB record from 1969 ~3.75 miles north of Survey Area.

Species	Status	Lifeform and Habitat	Occurrence in Study Area
Martes caurina humboldtensis **Humboldt marten**	FT / SE / SSC / S1	Prefers denning and nesting in old-growth conifers and snags. Can be found in lodgepole pine, Douglas-fir, and chaparral woodlands with dense canopy cover. Occurs in coastal Oregon and northern coastal California.	**Not likely to occur.** The Survey Area lacks suitable conifer forest or chaparral habitat to support this species.
Pekania pennanti **Fisher**	SSC / S2S3	Prefer mature or late-successional forests with dense canopy closure, multiple canopy layers, high structural complexity, and large-diameter live and dead trees and downfall with cavities and deformities. Forest type is less important than forest structure and abundant prey, although coniferous or mixed forests that contain key habitat and structural components provide the most suitable habitat.	**Low.** The Survey Area contains somewhat suitable late-successional interior live oak woodland to support this species; no potentially suitable den sites were detected during the site visits. No database records within 5 miles; nearest is 2016 CNDDB record ~6.5 miles north of Survey Area.
Taxidea taxus **American badger**	SSC / S3	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils; require sufficient food source, friable soils, and open, uncultivated ground; prey on burrowing rodents. Widespread throughout California and North America.	**Low**. The Survey Area contains grassland habitat with friable soils; no potentially suitable dens were detected during the site visits. No CNDDB records within 9-quad literature search area; no iNaturalist records within 5 miles.

STATUS CODES:

FE	Federally Endangered	SD	State Delisted	1A	Plants presumed extinct in California
FT	Federally Threatened	SR	State rare plant	1B	Plants Rare, Threatened, or Endangered in California and elsewhere
FC	Federal Candidate	SSC	California Species of Special Concern	2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
FD	Federally Delisted	FP	CDFW Fully Protected	3	Plants about which we need more information – a review list
SE	State Endangered	WL	CDFW Watch List	4	Plants of limited distribution – a watch list
ST	State Threatened	CNPS	California Native Plant Society Listing	.1	Seriously threatened in California (high degree/immediacy of threat)
SC	State Candidate			.2	Fairly threatened in California (moderate degree/immediacy of threat)
				.3	Not very threatened in California (low degree/immediacy of threats or no current threats known)

BCC Birds of Conservation Concern: USFWS-designated migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities and draw attention to species in need of conservation action.

STATE RANKING The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

SX Presumed Extirpated – Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

S1 Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.

S3 Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

S4 Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

Attachment B-5

ARID WEST DATA SHEETS

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Form Energy Battery Storage City/County: Redwood Valley, Mendocino Co. Sampling Date: 07/19/2023
Applicant/Owner: State: CA Sampling Point: 1
Investigator(s): K. Pulsipher Section, Township, Range:
Landform (hillside, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): <2%
Subregion (LRR): LRR C Lat: 39.250185° Long: -123.197350° Datum: WGS84
Soil Map Unit Name: Pinole gravelly loam, 2 to 8 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland? **Yes** X **No**

Remarks:
Within man-made stormwater drainage ditch / swale (Drainage-3). Feature's purpose is directing overflow from a stormwater catchment basin within adjacent substation via culvert, direct stormwater flows to discharge overland in uplands as sheetflow.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 3x8 ft)			
1. *Cyperus eragrostis*	2	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2 =Total Cover		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks:
Field is managed for weed / fire abatement through mowing, the field and ditch / swale feature had been mowed at some point prior to survey.

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SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/4	92	7.5YR 5/6	3	C	M	Loamy/Clayey	Distinct redox concentrations
			7.5YR 2.5/1	8	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: extremely dry/hard soil

Depth (inches): 6

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Iron and manganese redox concentrations observed in matrix, manganese as soft masses (second line redox feature above). Drainage feature is a linear shaped concave feature that directs stormwater to discharge overland as sheetflow. May be subject to extended ponding if no longer graded/sloped in a way to prevent ponding.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Biotic crust observed on rip-rap located within feature ~25 ft east of sample point. FAC-Neutral Test done based off of one species observed within OHWM.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Form Energy Battery Storage City/County: Redwood Valley, Mendocino Co. Sampling Date: 07/19/2023
Applicant/Owner: State: CA Sampling Point: 2
Investigator(s): K. Pulsipher Section, Township, Range:
Landform (hillside, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): <2%
Subregion (LRR): LRR C Lat: 39.250621° Long: -123.198091° Datum: WGS84
Soil Map Unit Name: Pinole gravelly loam, 2 to 8 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Within man-made stormwater drainage ditch / swale (Drainage-2). Feature's purpose is directing overflow from a stormwater catchment basin within adjacent substation via culvert, direct stormwater flows to discharge overland in uplands as sheetflow where feature contours disappear.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 3x8 ft)			
1. *Daucus pusillus*	3	Yes	UPL
2. *Phalaris aquatica*	2	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 0)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust 3

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	3	x 5 =	15
Column Totals:	5 (A)		23 (B)
Prevalence Index = B/A =			4.60

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:
Field is managed for weed / fire abatement through mowing, the field and ditch / swale feature had been mowed at some point prior to survey.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	7.5YR 4/4	92	7.5YR 5/6	2	C	M	Loamy/Clayey	Distinct redox concentrations
			7.5YR 2.5/1	5	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: extremely dry/hard soil

Depth (inches): 7

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Iron and manganese redox concentrations observed in matrix, manganese as soft masses (second line redox feature above). Drainage feature is a linear shaped concave feature that directs stormwater to discharge overland as sheetflow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Biotic crust observed below OWHM.

ENG FORM 6116-1, JUL 2018 Arid West – Version 2.0

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Form Energy Battery Storage
Project Number:
Stream: Drainage Ditch/Swale-1
Investigator(s): K. Pulsipher

Date: 07/19/2023 **Time:** 11:30 am
Town: Redwood Valley **State:** CA
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
Man-made stormwater drainage ditch/swale

Projection: **Datum:** WGS84
Coordinates: 39.2510847, -123.1970814

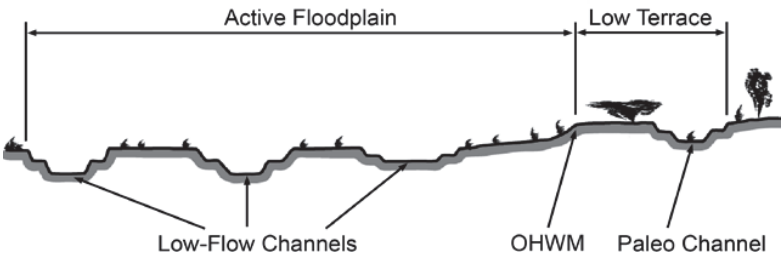
Potential anthropogenic influences on the channel system:
Feature is man-made. Purpose appears to direct overflow from stormwater management catchment basin in adjacent substation via culvert to discharge overland in uplands as sheetflow.

Brief site description:
Feature is adjacent to substation fence within field characterized by non-native annual grassland. Field appears to be maintained via mowing for weed/fire abatement; site had been mowed at some point prior to survey. Fed by ~12-in diameter plastic culvert from substation catchment basin. Small-sized (~6-in) rip-rap rock present around culvert opening.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

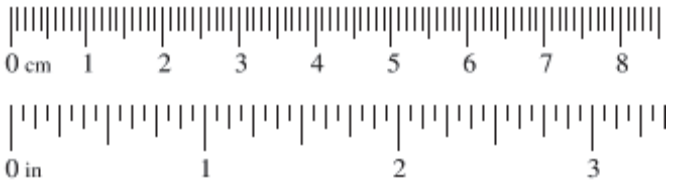


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ☐ GPS
   - ☐ Other:

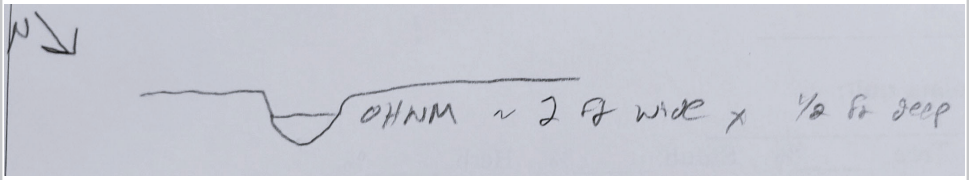
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Form Energy **Cross section ID:** 1 **Date:** 07/19/2023 **Time:** 11:30 am

Cross section drawing:



OHWM

GPS point: 39.2510847, -123.1970814

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Change from almost 0% veg cover to ~60% veg cover, and a break in bank slope. Veg cover below OHWM is field bindweed (Convolvulus arvensis; UPL) and English plantain (Plantago lanceolata; FAC). Other species present at and above OHWM include white-stemmed filaree (Erodium brachycarpum; UPL), wild oats (Avena fatua; UPL), Englsih plantain, field bindweed, and cheatgrass (Bromus tectorum; UPL).

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 39.251087°, -123.197086°

Characteristics of the floodplain unit:

Average sediment texture: Loam

Total veg cover: 2 % Tree: _____% Shrub: _____% Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: biotic crust on rip-rap
- ☐ Other: _____
- ☐ Other: _____

Comments:

One northern catalpa (Catalpa speciosa; FAC) growing adjacent to swale ~80 ft downstream of transect.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Form Energy Battery Storage
Project Number:
Stream: Drainage Ditch/Swale-2
Investigator(s): K. Pulsipher

Date: 07/19/2023 **Time:** 10:30 am
Town: Redwood Valley **State:** CA
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
Man-made stormwater drainage ditch/swale

Projection: **Datum:** WGS84
Coordinates: 39.2506230, -123.1980912

Potential anthropogenic influences on the channel system:

Feature is man-made. Purpose appears to direct overflow from stormwater management catchment basin in adjacent substation via culvert to discharge overland in uplands as sheetflow.

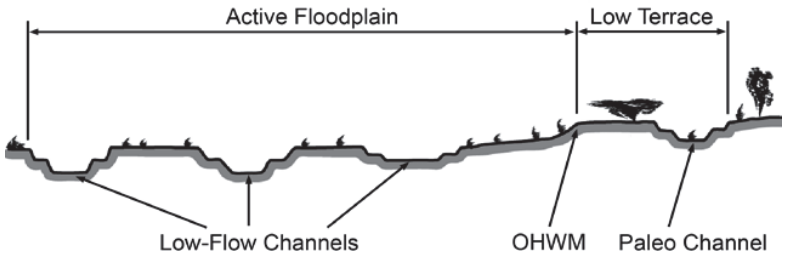
Brief site description:

Feature is adjacent to substation fence within field characterized by non-native annual grassland. Field appears to be maintained via mowing for weed/fire abatement; site had been mowed at some point prior to survey. Fed by ~12-in diameter plastic culvert from substation catchment basin. Small-sized (~6-in) rip-rap rock present around culvert opening.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

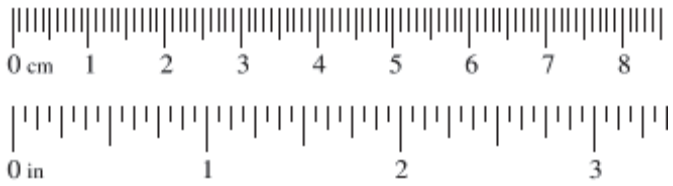


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ☐ GPS
   - ☐ Other:

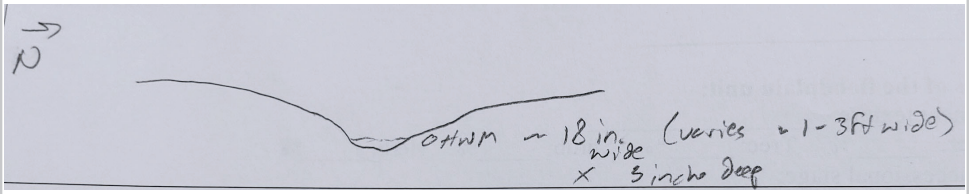
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
			Cobble	Gravel
	2.56	64	Pebble	
	0.157	4	Granule	
	0.079	2.00	Very coarse sand	
	0.039	1.00	Coarse sand	
	0.020	0.50	Medium sand	Sand
1/2	0.0098	0.25	Fine sand	
1/4	0.005	0.125	Very fine sand	
1/8	0.0025	0.0625	Coarse silt	
1/16	0.0012	0.031	Medium silt	
1/32	0.00061	0.0156	Fine silt	Silt
1/64	0.00031	0.0078	Very fine silt	
1/128	0.00015	0.0039	Clay	Mud



Project ID: Form Energy **Cross section ID:** 2 **Date:** 07/19/2023 **Time:** 10:30 am

Cross section drawing:



OHWM

GPS point: 39.2506230, -123.1980912

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Change from almost 0% veg cover to ~60% veg cover, and a break in bank slope. Veg cover below OHWM is wild carrot (Daucus pusillus; UPL) and Harding grass (Phalaris aquatica; FACU). Other species present at and above OHWM include white-stemmed filaree (Erodium brachycarpum; UPL), wild oats (Avena fatua; UPL), wild carrot, cheatgrass (Bromus tectorum; UPL), English plantain (Plantago lanceolata; FAC), rattlesnake grass (Briza maxima; UPL), prickly lettuce (Lactuca serriola; FACU).

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 39.250622°, -123.198091°

Characteristics of the floodplain unit:

Average sediment texture: Loam

Total veg cover: 2 % Tree: _____% Shrub: _____% Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: biotic crust on rip-rap
- ☐ Other: _____
- ☐ Other: _____

Comments:

Stumps and one remnant skeleton of what appears to be a common fig (Ficus carica; FACU) present within channel.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Form Energy Battery Storage
Project Number:
Stream: Drainage Ditch/Swale-3
Investigator(s): K. Pulsipher

Date: 07/19/2023 **Time:** 9 am
Town: Redwood Valley **State:** CA
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
Man-made stormwater drainage ditch/swale

Projection: **Datum:** WGS84
Coordinates: 39.2501910, -123.1973503

Potential anthropogenic influences on the channel system:

Feature is man-made. Purpose appears to direct overflow from stormwater management catchment basin in adjacent substation via culvert to discharge overland in uplands as sheetflow.

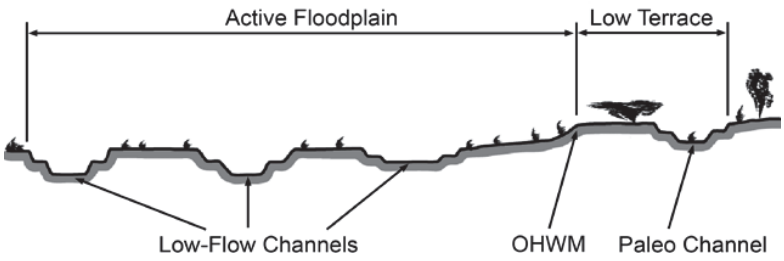
Brief site description:

Feature is adjacent to substation fence within field characterized by non-native annual grassland. Field appears to be maintained via mowing for weed/fire abatement; site had been mowed at some point prior to survey. Fed by ~12-in diameter plastic culvert from substation catchment basin. Small-sized (~6-in) rip-rap rock present around culvert opening.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

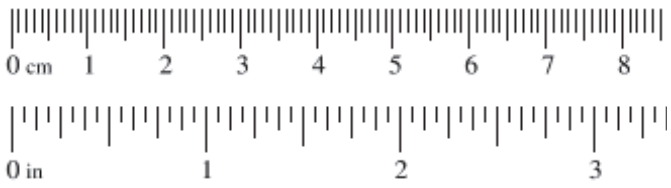


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ■ Digitized on computer
   - ☐ GPS
   - ☐ Other:

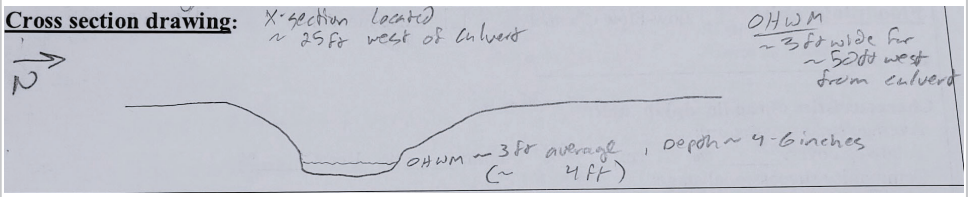
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: Form Energy **Cross section ID:** 3 **Date:** 07/19/2023 **Time:** 9 am

Cross section drawing:



OHWM

GPS point: 39.2501910, -123.1973503

Indicators:

- ☐ Change in average sediment texture
- ■ Change in vegetation species
- ■ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Change from almost 0% veg cover to ~60% veg cover, and a break in bank slope. Veg cover below OHWM is tall flatsedge (Cyperus eragrostis; FACW). Other species present at OHWM include white-stemmed filaree (Erodium brachycarpum; UPL), Klamath weed (Hypericum perforatum; FACU), sheep sorrel (Rumex acetosella; FACU). Species observed above OHWM include wild oats (Avena fatua; UPL), English plantain (Plantago lanceolata; FAC), wild carrot (Daucus pusillus; UPL), white-stemmed filaree, field bindweed (Convolvulus arvensis; UPL), and Klamath weed.

Floodplain unit:

■ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 39.250185°, -123.197350°

Characteristics of the floodplain unit:

Average sediment texture: Loam

Total veg cover: 5 % Tree: _____% Shrub: _____% Herb: 5 %

Community successional stage:

- ☐ NA
- ■ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: Fine sediment deposition on rip-rap
- ■ Other: biotic crust on rip-rap
- ☐ Other: _____

Comments:

Stumps and one remnant skeleton of what appears to be a common fig (Ficus carica; FACU) present within channel.