SALMON CREEK SANDBLAST WASTE ABATEMENT PROJECT

NATURAL ENVIRONMENT STUDY

MENDOCINO COUNTY, CA

01-MEN-001—POST MILES 42.4/43.3

EA 01-40141 / EFIS 01-2000-0111

May 2023

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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STATE OF CALIFORNIA
Department of Transportation

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SUMMARY

The California Department of Transportation (Caltrans) is proposing a waste abatement and cleanup project to remove lead-contaminated soils impacted by years of paint sandblast removal activities from the Salmon Creek Bridge. The proposed project would include widening of Spring Grove Road (to accommodate large trucks and trailers), excavation and removal of lead-contaminated soils, associated equipment staging, and restoration of impacted vegetation/habitats.

This Natural Environment Study (NES) was prepared to identify existing biological resources, assess potential impacts, and identify permitting requirements for the proposed project. The NES provides information about the existing environment within the project area, including special status botanical and wildlife species and their associated habitats and other sensitive habitats present in the vicinity of the project that could potentially be affected by the proposed Salmon Creek Sandblast Waste Abatement Project.

The project would have both permanent and temporary impacts to jurisdictional Waters of the U.S./Waters of the State, coastal wetlands (as defined by the California Coastal Act [CCA]), and riparian habitat, and as noted in the table below. Onsite and/or offsite enhancement or mitigation would be necessary to offset project-related wetland and riparian impacts as permits dictate.

Jurisdictional Waters	Temporary Impacts	Permanent Impacts
Wetland Waters of the U.S./State	0.012 acre	0.231 acre
Non-Wetland Waters of the U.S./State	0.014 acre	--0--
CCA Coastal Wetlands	0.560 acre	0.954 acre
Riparian Habitat	0.839 acre	--0--

There would be approximately 0.144 acre of permanent impacts to Sensitive Natural Communities, which include impacts to:

- 0.003 acre of Grand Fir Forest
- 0.060 acre of Seaside Woolly-Sunflower–Seaside Daisy–Buckwheat patches
- 0.081 acre of Small-fruited Bulrush Marsh

Onsite and/or offsite enhancement or mitigation would be necessary to offset project-related impacts to Sensitive Natural Communities as permits dictate.

Informal consultation with NMFS via the Programmatic Biological Opinion (PBO) under Section 7 of the Federal Endangered Species Act is anticipated for effects to the following federally listed species and designated critical habitat. Caltrans anticipates the proposed action ***may affect, is not likely to adversely affect:***

- Coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU (pop. 4)—federal endangered and critical habitat
- Steelhead trout (*Oncorhynchus mykiss irideus*)–Northern California DPS (pop. 49)—federal threatened

Informal consultation with USFWS via the PLOC under Section 7 of the Federal Endangered Species Act is anticipated for the following federally listed species. Caltrans anticipates the proposed action ***may affect, is not likely to adversely affect:***

- Tidewater goby (*Eucyclogobius newberryi*)—federal endangered
- Behren's silverspot butterfly (*Speyeria zerene behrensii*)—federal endangered
- Lotis blue butterfly (*Lycaeides argyrognomon lotis*)—federal endangered

The project would have ***no adverse effect*** to EFH for coho salmon (*Oncorhynchus kisutch pop. 4*)–Central California Coast ESU, Chinook salmon, Groundfish, Coastal Pelagics, or Highly Migratory Species.

Caltrans has determined the project would have ***no effect*** on the following federally listed species, critical habitats, or species proposed for listing.

- Burke's goldfields (*Lasthenia burkei*)–federal endangered
- Contra Costa goldfields (*Lasthenia conjugens*)–federal endangered
- Howell's spineflower (*Chorizanthe howellii*)–federal endangered
- Showy Indian clover (*Trifolium amoenum*)–federal endangered
- California red-legged frog (*Rana draytonii*)–federal threatened
- Marbled murrelet (*Brachyramphus marmoratus*)–federal threatened
- Northern spotted owl (*Strix occidentalis caurina*)–federal
- Short-tailed albatross (*Phoebastria (=Diomedea) albatrus*)–federal endangered
- Western snowy plover (*Charadrius nivosus*)–federal threatened

- Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)–Western U.S. DPS–federal threatened
- Chinook salmon (*Oncorhynchus tshawytscha)* (pop. 17)–California Coast ESU–federal threatened
- Green sturgeon *(Acipenser medirostris)*–Southern DPS–federal threatened
- Blue whale (*Balaenoptera musculus*)–federal endangered
- Fin whale (*Balaenoptera physalus*)–federal endangered
- Guadalupe fur seal (*Arctocephalus townsendi*) – federal threatened
- Humpback whale (*Megaptera novaeangliae*)–federal endangered
- Killer whale (*Orcinus orca*)–Southern Resident DPS–federal endangered
- North Pacific right whale (*Eubalaena japonica*)–federal endangered
- Pacific marten *(Martes caurina)*–Coastal DPS–federal threatened
- Point Arena mountain beaver *(Aplodontia rufa nigra)*–federal endangered
- Sei whale (*Balaenoptera borealis*)–federal endangered
- Sperm whale (*Physeter catodon*)–federal endangered
- Green sea turtle (*Chelonia mydas*)–East Pacific DPS–federal threatened
- Leatherback sea turtle (*Dermochelys coriacea*)–federal endangered
- Olive Ridley sea turtle (*Lepidochelys olivacea*)–federal threatened

Caltrans has determined the project would result in ***no State*** "***take"*** of the following state-listed species, species proposed for listing, or fully protected species:

- Burke's goldfields (*Lasthenia burkei*)–state endangered
- Howell's spineflower (*Chorizanthe howellii*)–state threatened
- Humboldt County milk-vetch (*Astragalus agnicidus*)–state endangered
- Menzies' wallflower (*Erysimum menziesii*)–state endangered
- Monterey clover (*Trifolium trichocalyx*)–state endangered
- Bald eagle *(Haliaeetus leucocephalus)*–state fully protected
- Marbled murrelet *(Brachyramphus marmoratus)*–state endangered

- Northern spotted owl *(Strix occidentalis caurina)*–state threatened
- Osprey *(Pandion haliaetus)*–state watch list
- Peregrine falcon *(Falco peregrinus)*–state fully protected
- Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)–Western U.S. DPS–state endangered
- White-tailed kite *(Elanus leucurus)*–state fully protected
- Coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU (pop. 4)–state endangered
- Steelhead trout (*Oncorhynchus mykiss irideus*)–Northern California DPS (pop. 49)–state candidate endangered
- Western bumble bee (*Bombus occidentalis*)–state candidate endangered
- Guadalupe fur seal *(Arctocephalus townsendi)*–state threatened and fully protected
- Pacific (Humboldt) marten *(Martes caurina)*–Coastal DPS–state endangered
- Ringtail *(Bassariscus astutus)*–state fully protected

The California Department of Fish and Wildlife (CDFW) also maintains a list of animal Species of Special Concern (SSC), most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, CDFW recommends their consideration during analysis of the impacts of proposed projects to protect declining populations and avoid the need to list them as endangered in the future. With implementation of the Standard Measures and Best Management Practices described in Section 1.3, the proposed project would have "*no impact*" to the following SSC:

- California red-legged frog *(Rana draytonii)*
- Foothill yellow-legged frog–Northwest/North Coast Clade (*Rana boylii*)
- Northern red-legged frog (*Rana aurora*)
- Pacific tailed frog (*Ascaphus truei*)
- Red-bellied newt *(Taricha rivularis)*
- Southern torrent salamander *(Rhyacotriton variegatus)*
- Ashy storm-petrel *(Oceanodroma homochroa)*
- Olive-sided flycatcher (*Contopus cooperi*)

- Purple martin (*Progne subis*)
- Tri-colored blackbird *(Agelaius tricolor)*
- Tufted puffin *(Fratercula cirrhata)*
- Yellow-breasted chat (*Icteria virens*)
- Yellow warbler (*Setophaga petechia*)
- Western snowy plover *(Charadrius nivosus)*
- Northern coastal roach *(Hesperoleucus venustus navarroensis)*
- Pacific lamprey *(Entosphenus tridentatus)*
- Tidewater goby (*Eucyclogobius newberryi*)
- Pacific fisher *(Pekania pennanti)*–West Coast DPS
- Pacific (Humboldt) marten *(Martes caurina)*–Coastal DPS
- Pallid bat (*Antrozous pallidus*)
- Point Arena mountain beaver *(Aplodontia rufa nigra)*
- Sonoma tree vole *(Arborimus pomo)*
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western red bat (*Lasiurus blossevillii*)
- Western Pond Turtle (*Actinemys marmorata*)

As currently proposed, this project would require the following permits and consultations:

- Informal consultation with the USFWS and NMFS under Section 7 of the Federal Endangered Species Act (FESA)
- Coastal Development Permit from Mendocino County and/or the California Coastal Commission
- Clean Water Act Section 401—Water Quality Certification from the North Coast Regional Water Quality Control Board
- Clean Water Act Section 404—Nationwide Permit 38 from the U.S. Army Corps of Engineers (USACE)
- 1602 Lake or Streambed Alteration Agreement (LSAA) from CDFW

Caltrans' Standard Measures and Best Management Practices would be implemented to avoid or minimize impacts to those species potentially affected by the project. Standard measures would protect sensitive terrestrial and aquatic animal species, rare plant species, migratory birds, natural communities, and jurisdictional waters.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABBREVIATION / ACRONYM	DESCRIPTION
ACE	Areas of Conservation Emphasis
AMSL	Above Mean Sea Level
BMPs	Best Management Practices
BSA(s)	Biological Study Area(s)
BSSB	Behren's silverspot butterfly
°C	Celsius
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CC (Chinook salmon)	Chinook salmon–California Coastal Evolutionarily Significant Unit
CCA	California Coastal Act
CCC	California Coastal Commission
CCC (coho salmon)	Central California Coast Evolutionarily Significant Unit
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEHC	California Essential Habitat Connectivity Project
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH	Critical Habitat
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibels

ABBREVIATION / ACRONYM	DESCRIPTION
DED	Draft Environmental Document
DPS	Distinct Population Segment
DTSC	(California) Department of Toxic Substances Control
ECL	Environmental Construction Liaison
EFH	Essential Fish Habitat
EO	Executive Order
ESA	Endangered Species Act
ESA(s)	Environmentally Sensitive Area(s)
ESHA(s)	Environmentally Sensitive Habitat Area(s)
ESL	Environmental Study Limits
ESU	Evolutionarily Significant Unit
et al.	and others
°F	Fahrenheit
FC	Federal Candidate (ESA listing status)
FE	Federal Endangered (ESA listing status)
FED	Final Environmental Document
FESA	Federal Endangered Species Act
FP	State Fully Protected (listing status)
FR	Federal Register
FT	Federal Threatened (ESA listing status)
FT	Feet/foot
G1	Sensitive Natural Community Global Rank – Critically Imperiled
G2	Sensitive Natural Community Global Rank – Imperiled
G3	Sensitive Natural Community Global Rank – Vulnerable
G4	Sensitive Natural Community Global Rank – Apparently Secure
G5	Sensitive Natural Community Global Rank – Demonstrably Secure
HUC	Hydrologic Unit Code
H:V	Horizontal:Vertical
HVF	High Visibility Fencing
IHA	Incidental Harassment Authorization (NMFS)
IPaC	Information for Planning and Consultation (USFWS)
LCP	Local Coastal Program
LSAA	Lake or Streambed Alteration Agreement

ABBREVIATION / ACRONYM	DESCRIPTION
MBTA	Migratory Bird Treaty Act
MGS	Midwest Guardrail System
MHW	Mean High Water
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NRCS	Natural Resources Conservation Service
NCRWQCB	North Coast Regional Water Quality Control Board
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OHWM	Ordinary High-Water Mark
PBO	Programmatic Biological Opinion
PEA	Preliminary Endangerment Assessment
PLOC	Programmatic Letter of Concurrence
PM(s)	Post Mile(s)
PPT	Parts per thousand
Project	Salmon Creek Sandblast Waste Abatement Project
PSI	Preliminary Site Investigation
RHA	Rivers and Harbors Act
ROW	Right of Way
RWQCB	Regional Water Quality Control Board
“S”	State ranking for Sensitive Natural Communities
S1	Sensitive Natural Communities State Rank – Critically Imperiled
S2	Sensitive Natural Communities State Rank – Imperiled
S3	Sensitive Natural Communities State Rank – Vulnerable
S4	Sensitive Natural Communities State Rank – Apparently Secure
S5	Sensitive Natural Communities State Rank – Secure
SC	State Candidate (ESA listing status)
SE	State Endangered (ESA listing status)
SF	Square Foot/Feet

ABBREVIATION / ACRONYM	DESCRIPTION
SNC(s)	Sensitive Natural Community(ies)
SR	State Route
SSC	(State) Species of Special Concern
SSI	Supplemental Site Investigation
ST	State Threatened (ESA listing status)
SWPPP	Stormwater Pollution Prevention Plan
THVF	Temporary High Visibility Fencing
U.S. or US	United States
USACE	United States Army Corp of Engineers
USC	United States Code
USCD	United States Climate Data
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the United States
WPCP	Water Pollution Control Program

CHAPTER 1. INTRODUCTION

The California Department of Transportation (Caltrans) is proposing a waste abatement and cleanup project to remove lead-contaminated soils impacted by years of paint sandblast removal activities from the Salmon Creek Bridge. The proposed project would also include widening of Spring Grove Road (to accommodate large trucks and trailers), excavation and removal of lead-contaminated soils, associated equipment staging, and restoration of impacted vegetation/habitats.

1.1 Project History

In the 1950s and 60s, lead based paint was used on the Salmon Creek Bridge. Due to the bridge's proximity to the ocean, the painted steel surfaces require regular maintenance, which includes sandblasting in preparation for new paint. Since the bridge's construction in 1950 through approximately 1999, the sandblast media was not contained allowing the waste, including lead and zinc containing paint fragments, to fall to the ground—much of it being carried easterly onto adjacent private parcels by the prevailing coastal winds.

A project proposing to replace the Salmon Creek Bridge was programmed in 2012. A Preliminary Site Investigation (PSI) conducted at the site in 2015 indicated shallow soil and potentially groundwater beneath the Salmon Creek Bridge had been impacted by bridge paint sandblast waste. Lead concentrations in the soil were found to exceed regulatory residential/industrial human health screening criteria and California hazardous waste thresholds. Zinc concentrations in the soil were found to be elevated above naturally occurring background levels but below regulatory residential/industrial human health screening criteria. Lead concentrations in groundwater were found to exceed the California drinking water standard.

The results of the 2017 Preliminary Endangerment Assessment (PEA) and 2019 Supplemental Site Investigation (SSI) further confirmed that shallow soil within the bridge site and adjacent private parcels have been impacted by bridge paint sandblast waste (Geocon 2017, Geocon 2019). The PEA and SSI further evaluated the extent of sandblast waste-related impacts in soil, groundwater, and creek sediment and porewater within the existing state right of way (ROW) and adjacent privately-owned parcels. The highest lead-in-soil concentrations were identified below and immediately east of the bridge, including the general vicinity of a residential structure (residence) located on the privately owned parcel north of Salmon Creek.

No significant elevated lead-in-soil concentrations were identified west of the bridge, including the immediate vicinity of a second residential structure (caretaker's residence) located north of Salmon Creek near its outlet to the Pacific Ocean. Human health and ecological risk evaluations were presented in the referenced reports. As a result of the investigations, Caltrans entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) for regulatory oversight of the cleanup project.

1.1.1. Purpose and Need

The purpose of the project is to remediate lead-impacted shallow soil in the State ROW and on the privately-owned parcels east of the Salmon Creek Bridge. The project is needed because historic bridge painting practices resulted in elevated lead concentrations in shallow soils beneath and east of the Salmon Creek Bridge.

1.2 Project Description

1.2.1. Project Location

The Salmon Creek Bridge is located along State Route (SR) 1 at Post Miles (PMs) 42.4 through 43.3 in Mendocino County south of the community of Albion and approximately 2.7 miles north of the SR 128 junction. The bridge spans Salmon Creek near its outlet into Whitesboro Cove on the Pacific Ocean. The existing two-lane bridge structure was constructed in 1950 and consists of a seven-span steel deck, Warren truss with steel beam spans over tower bents, and a cast-in-place reinforced concrete deck. The project area includes the lead contaminated soil removal sites, Spring Grove Road (a Mendocino County road), and privately-owned parcels on the east and west sides of the highway.

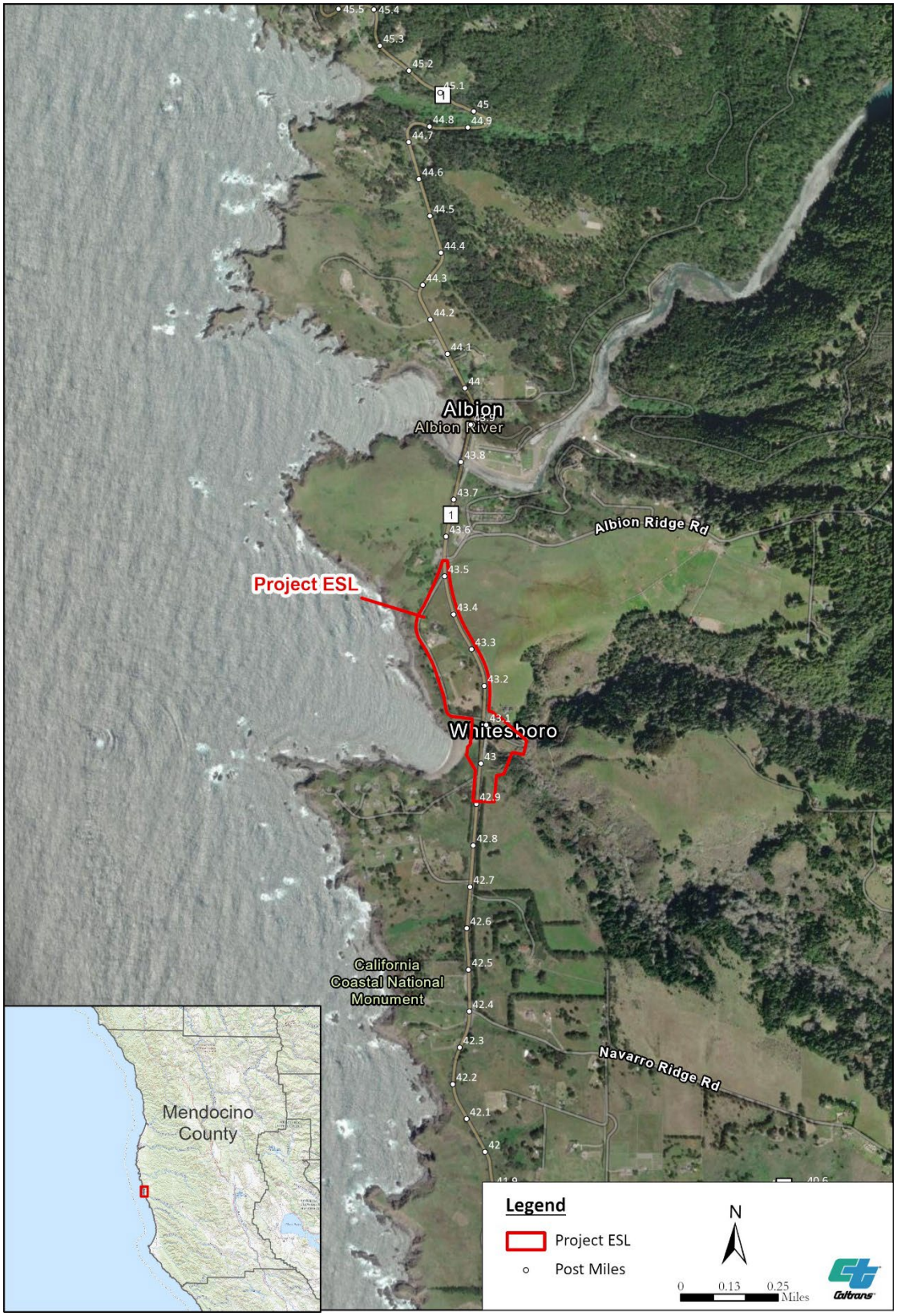

Figure 1. Project Vicinity

1.2.2. Construction Scenario

A Feasibility Study was prepared by Geocon to evaluate several remediation alternatives (Geocon 2022). Based on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) nine-criteria analysis performed in the Feasibility Study, Alternative 5–Targeted Removal is the recommended remediation strategy and preferred alternative being proposed.

Staging

Staging areas would be selected after approval of the Final Environmental Document and during the permitting phase; however, may include the following:

- Peters parcel (APN 123-330-02)
- The northern portion of the Hughes parcel (APN 123-330-09) just south of the intersection of Spring Grove Road and SR 1
- A portion of Hughes parcel (APN 123-330-10) east of Spring Grove Road
- The westerly portion of the Funke parcel (APN 123-360-07).
- The end of the paved section of Spring Grove Road, within Mendocino County ROW, under an encroachment permit

Site Access/Road Widening

Access to the north side of Salmon Creek would be via Spring Grove Road, a partially paved, dead end county road. A short stretch of this road near the intersection with SR 1 would be widened to 22 feet. The remaining paved portion of Spring Grove Road, between SR 1 and the edge of the Salmon Creek bluff, would be repaired and overlaid with asphalt. The downslope portion of Spring Grove Road, from the edge of the bluff to the project area, is a single lane, unpaved road. This segment would be widened by excavating into the uphill side and paving with asphalt for improved traction. Cut slopes are anticipated to be 1:1 or steeper based on existing cut slopes. Geotechnical staff has provided recommendations for the road improvements and would be on-site to monitor the widening work.

Existing fencing along the south edge of the unpaved portion of Spring Grove Road and beneath the bridge would be removed to allow room for equipment to work safely. The hairpin turn at the end of Spring Grove Road would be widened and a truck turnaround constructed at the end of the county right of way.

Upon completion of construction, sections of pavement on Spring Grove Road may require rehabilitation due to impacts from construction traffic. The County of Mendocino would require the road restored to its pre-project condition or better, which would likely involve asphalt overlay and restriping. One culvert would be replaced along Spring Grove Road and two new culverts would be installed near the bottom of the road.

If staging area Option 1 (Peters parcel) is selected, a temporary access opening to provide traffic control for ingress and egress from SR 1 may be constructed at the northeast corner of the parcel. This access would be removed upon completion of the project and the area restored to its pre-construction condition.

On the south side of Salmon Creek, a new access road would be constructed at an existing access point near the southeast corner of the bridge. A landing would be graded at the east end of the access road for equipment turnaround, loading, and staging. It may also be necessary to build temporary access at the southwest corner of the bridge for soil removal and restoration work beneath the bridge.

Utility Relocation

PG&E and AT&T utility poles are in conflict with the proposed remedial excavations and access roads. These poles would be relocated or reset deeper to ensure they are not compromised during project activities. Salmon Creek Bridge is equipped with a seismic monitoring system located at the southeast corner of the bridge. Some of the associated instrumentation would require relocation as a result of new site access roads. There are also a number of utilities associated with the residence (on the privately owned parcel north of Salmon Creek) that should be protected in place or replaced in-kind.

Vegetation Removal

Removal of vegetation would be necessary prior to the excavation of lead-impacted soils. However, the benefit of the proposed targeted lead remediation method is the preservation of vegetation on the steep, difficult to access slopes within the project area. Details on the level of impacts of these areas are described in Sections 4.1.1. and 4.1.2.

Soil Remediation/Excavation

Once vegetation is removed, soil remediation would include the excavation of shallow lead-impacted soil within the State ROW to concentrations below the regulatory commercial/industrial land use cleanup goal (320 milligrams per kilogram (mg/kg) plus background concentration). Remedial excavations on private parcels east of the State ROW would be performed to concentrations below the regulatory residential land use cleanup goal (80 mg/kg plus background concentration). Excavation depths would vary from 0.5 feet to 1.5 feet and lateral extents would be based on the results of the 2017 PEA and 2019 SSI (Geocon 2017, Geocon 2019). It is estimated that approximately 7,000 cubic yards of lead-impacted soil would be excavated from the site. On-site soil testing during construction would be used to verify soils left in place meet the cleanup goals. Excavated materials would be shuttled to the staging area(s) and temporarily stockpiled. These stockpiles would have an impermeable liner underneath and would be covered when not in use.

Disposal Sites

Composite samples taken from the excavated lead-impacted soil would be tested to characterize the material and determine the disposal strategy. It is expected the lead contaminated soil would be transported in covered trailers to California-licensed Class I or II landfill facilities based on landfill acceptance criteria.

Restoration

Areas where lead-impacted soils are removed would be restored by placement and contouring of fill material, amendment of soils as needed, erosion control, revegetation, and wetland restoration. Revegetation would include methods such as hydroseeding and installation of new plants. Where excavation occurs on existing slope faces steeper than 2:1 (H:V), fill would not be placed and the slope faces would be restored by using a combination of erosion control measures such as native sod mats, live cuttings, coir netting, and micro-stepping.

1.3 Standard Measures and Best Management Practices

The following section provides a list of project features, standard practices (measures), and Best Management Practices (BMPs) that are included as part of the project description. These avoidance and minimization measures are prescriptive and sufficiently standardized to be generally applicable and do not require special tailoring to a project situation. These are generally measures that result from laws, permits, guidelines, resource management plans, and resource agency directives and policies. They predate the project's proposal and apply to all similar projects. For this reason, these measures and practices do not qualify as project mitigation, and the effects of the project are analyzed with these measures in place. Any project-specific avoidance, minimization, or mitigation measures that would be applied to reduce the effects of project impacts are listed in relevant sections of Chapter 4. Standard measures and Best Management Practices relevant to the protection of natural resources deemed applicable to the proposed project include:

1.3.1. Water Quality and Stormwater Runoff

WQ-1: The project would comply with the provisions of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Order 2022-0033-DWQ), effective January 1, 2023. If the project results in a land disturbance of one acre or more, coverage under the Construction General Permit (CGP) (Order 2022-0057-DWQ) is also required.

Before any ground-disturbing activities, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) (per the Construction General Permit Order 2022-0057-DWQ) or Water Pollution Control Program (WPCP) (projects that result in a land disturbance of less than one acre) that includes erosion control measures and construction waste containment measures to protect Waters of the State during project construction. For SWPP projects (which are governed according to both the Caltrans NPDES permit and the Construction General Permit), soil disturbance is permitted to occur year-round as long as the Caltrans NPDES and CGP and the corresponding requirements of those permits are adhered to. For WPCP projects (which are governed according to the Caltrans NPDES permit), soil disturbance is permitted to occur year-round as long as the Caltrans NPDES permit is adhered to.

The SWPPP or WPCP would identify the sources of pollutants that may affect the quality of stormwater; include construction site Best Management Practices (BMPs) to control sedimentation, erosion, and potential chemical pollutants; provide for

construction materials management; include non-stormwater BMPs; and include routine inspections and a monitoring and reporting plan. All construction site BMPs would follow the latest edition of the *Caltrans Storm Water Quality Handbooks: Construction Site BMPs Manual* to control and reduce the impacts of construction-related activities, materials, and pollutants on the watershed.

The project SWPPP or WPCP would be continuously updated to adapt to changing site conditions during the construction phase.

Construction may require one or more of the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (e.g., fuel, oil, hydraulic fluid, and grease) would be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities would be removed by dewatering.
- Water generated from the dewatering operations would be discharged on-site for dust control and/or to an infiltration basin, or disposed of offsite.
- Temporary sediment control and soil stabilization devices would be installed.
- Existing vegetated areas would be maintained to the maximum extent practicable.
- Clearing, grubbing, and excavation would be limited to specific locations, as delineated on the plans, to maximize the preservation of existing vegetation.
- Vegetation reestablishment or other stabilization measures would be implemented on disturbed soil areas, per the Erosion Control Plan.
- For SWPPP projects (which are governed according to both the Caltrans NPDES permit and the Construction General Permit), soil disturbance is permitted to occur year-round as long as the Caltrans NPDES and CGP and the corresponding requirements of these permits are adhered to. For WPCP projects (which are governed according to the Caltrans NPDES permit), soil disturbance is permitted to occur year-round as long as the Caltrans NPDES permit is adhered to.

WQ-2: The project would incorporate pollution prevention and design measures consistent with the *2016 Caltrans Storm Water Management Plan*. This plan complies with the requirements of the Caltrans Statewide NPDES Permit (Order 2022-0033-DWQ).

The project design may include one or more of the following:

- Vegetated surfaces would feature native plants, and revegetation would use the seed mixture, mulch, tackifier, and fertilizer recommended in the Erosion Control Plan prepared for the project.

- Where possible, stormwater would be directed in such a way as to sheet flow across vegetated slopes, thus providing filtration of any potential pollutants.

1.3.2. General

BR-1: Before start of work, as required by permit or consultation conditions, a Caltrans biologist or Environmental Construction Liaison (ECL) would meet with the contractor to brief them on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, drilling site management, and how to identify and report regulated species within the project areas.

1.3.3. Animal Species

AS-1: To protect migratory and nongame birds (occupied nests and eggs), if possible, vegetation removal would be limited to the period outside of the bird breeding season (removal would occur between September 16 and January 31). If vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week prior to vegetation removal. If an active nest is located, the biologist would coordinate with CDFW to establish appropriate species-specific buffer(s) and any monitoring requirements. The buffer would be delineated around each active nest and construction activities would be excluded from these areas until birds have fledged, or the nest is determined to be unoccupied.

AS-2: Pre-construction surveys for active raptor nests within one-quarter mile of the construction area would be conducted by a qualified biologist within one week prior to initiation of construction activities. Areas to be surveyed would be

limited to those areas subject to increased disturbance due to construction activities (i.e., areas where existing traffic or human activity is greater than or equal to construction-related disturbance need not be surveyed). If any active raptor nests are identified, appropriate conservation measures (as determined by a qualified biologist) would be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities near the active nest site until the young have fledged.

AS-3: A qualified biologist would monitor construction activities on the banks of Salmon Creek that could potentially impact sensitive biological receptors (e.g., amphibians, fish). The biological monitor would be present during all vegetation removal and soil disturbing activities that have the potential to introduce sediment or other contaminants into Salmon Creek..

AS-4: ***Aquatic Species Relocation Plan:*** An Aquatic Species Relocation Plan, or equivalent, would be prepared by a qualified biologist and include provisions for pre-construction surveys and the appropriate methods or protocols to relocate any species found. If previously unidentified threatened or endangered species are encountered or anticipated incidental take levels are exceeded, work would either be stopped until the species is out of the impact area, or the appropriate regulatory agency would be contacted to establish steps to avoid or minimize potential adverse effects.

If the animal is in imminent danger or expected to delay construction, then the animal may be safely relocated by a qualified biologist to suitable habitat outside the project area. The contractor-supplied biologist would be present during all work occurring on the banks of Salmon Creek.

AS-5: ***Marine Mammal Monitoring Plan:*** In coordination with NMFS, a Marine Mammal Monitoring Plan would be prepared by the contractor prior to construction. The plan would include observation of Whitesboro Cove (i.e., seal habitat) by a qualified biological monitor prior to beginning construction activities to note any marine mammals within a predetermined safety zone before or during construction. The biological monitor would have the authority to stop construction activities until he/she confirms the species is off site or has moved a distance that is believed to be out of range for disturbance.

1.3.4. Invasive Species

IS-1: Invasive non-native species control would be implemented. Measures would include:

- Straw, straw bales, seed, mulch, or other material used for erosion control or landscaping would be free of noxious weed seed and propagules.
- All equipment would be thoroughly cleaned of all dirt and vegetation prior to entering the job site to prevent importing invasive non-native species. Project personnel would adhere to the latest version of the *California Department of Fish and Wildlife Aquatic Invasive Species Cleaning/Decontamination Protocol (Northern Region)* for all field gear and equipment in contact with water.

1.3.5. Plant Species, Sensitive Natural Communities and ESHA

NC-1: Seasonally appropriate, pre-construction surveys for sensitive plant species would be completed (or updated) by a qualified biologist prior to construction in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

NC-2: A Revegetation Plan would be prepared which would include a plant palette, establishment period, watering regimen, monitoring requirements, and pest control measures. The Revegetation Plan would also address measures for wetland and riparian areas temporarily impacted by the project.

NC-3: Prior to the start of work, Temporary High Visibility Fencing (THVF) and/or flagging would be installed around sensitive natural communities, environmentally sensitive habitat areas, rare plant occurrences, intermittent streams and wetlands and other waters, where appropriate. No work would occur within fenced/flagged areas.

NC-4: Upon completion of construction, all superfluous construction materials would be completely removed from the site. The site would then be restored by regrading and stabilizing with a hydroseed mixture of native species along with fast growing sterile erosion control seed, as required by the Erosion Control Plan.

1.3.6. Wetlands and Other Waters

WW-1: Seasonally appropriate, pre-construction surveys for sensitive plant species would be completed (or updated) by a qualified biologist prior to construction in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018a).

WW-2: In-stream work would be restricted to the period between June 15 and October 15 to protect water quality and vulnerable life stages of sensitive fish species. Construction activities restricted to this period include any work below the ordinary high water. Construction activities performed above the ordinary high water mark of a watercourse that could potentially directly impact surface waters (i.e., soil disturbance that could lead to turbidity) would be performed during the dry season, typically between June through October, or as weather permits per the authorized contractor-prepared Storm Water Pollution Prevention Plan (SWPPP), Water Pollution Control Program (WPCP),) and/or project permit requirements.

CHAPTER 2. STUDY METHODS

This chapter describes the regulatory requirements relevant to protected biological resources at the federal, state and local level and presents the methods used to identify and evaluate the potential presence and direct or indirect impacts to protected resources, including sensitive natural communities, special status plants and animals, and jurisdictional waters and/or wetlands within or adjacent to the project area. This chapter also includes a description of the study area.

2.1. Study Area

The study area consists of the project footprint, Environmental Study Limits (ESL), and Biological Study Areas (BSAs) described below.

2.1.1. Project Footprint

The area within the Environmental Study Limits the project is anticipated to impact, both temporarily and permanently. This includes staging and disposal areas.

2.1.2. Environmental Study Limits

The Project Engineer provides the Environmental team the Environmental Study Limits (ESL) as an anticipated boundary for potential impacts (Figure 2). The ESL is *not* the project footprint. Rather, it is the area encompassing the project footprint where there could potentially be direct and indirect disturbance by construction activity. The ESL is larger than the project footprint in order to accommodate any future scope changes. The ESL is also used for identifying the Biological Study Area (BSA) needed for biological resources.

2.1.2. Biological Study Areas

The Biological Study Area (BSA) includes areas within and adjacent to the ESL where standard environmental assessments for sensitive resources (habitats, plants, wildlife, wetlands and other waters, etc.) are conducted. The BSA encompasses the ESL plus any areas outside of the ESL that could potentially be affected by the project (e.g., noise, visual, Coastal Zone, etc.). The BSA considers elements of construction that reach beyond the immediate construction footprint, such as elevated noise levels and modifications to surface and subsurface hydrology, or permanent and temporary changes in solar or sound exposure.

For example, several sensitive wildlife species could be vulnerable to indirect impacts outside the construction footprint resulting from increased noise or vibration during construction. Likewise, sensitive plants could be impacted by changes in solar exposure or surface and subsurface hydrology. When there is more than one type of potential impact or several resources with different sensitivities outside of the ESL, more than one type of BSA may be defined and analyzed. The potential for both direct and indirect impacts is considered when determining the BSA.

The following BSAs were identified for the proposed project to assess potential impacts to biological resources:

- **BSA #1 (Primary)** – This BSA encompasses the ESL plus a 100-foot buffer to account for sensitive coastal resources as defined by the California Coastal Act. This is the primary BSA used to assess potential impacts to most of the sensitive biological resources discussed in Chapters 3 and 4.

- **BSA #2 (Auditory/Visual/Raptors)** – This BSA encompasses the ESL plus a 0.25-mile buffer to account for potential construction-related auditory and/or visual impacts to special status animal species, raptors, and their habitats.

- **BSA #3 (Waters)** – This BSA encompasses any waterways or waterbodies downstream of the project ESL that may have suitable habitat for special status fish species. This includes downstream portions of Salmon Creek and 100 feet into the Pacific Ocean from the mouth of Salmon Creek. These waters were assessed for potential indirect impacts as a result of potential sedimentation and/or pollutant contamination from project-related activities.

- **BSA #4 (Butterflies)** – This BSA encompasses the ESL plus a 330-foot buffer to account for any potential federal listed butterflies and habitats.

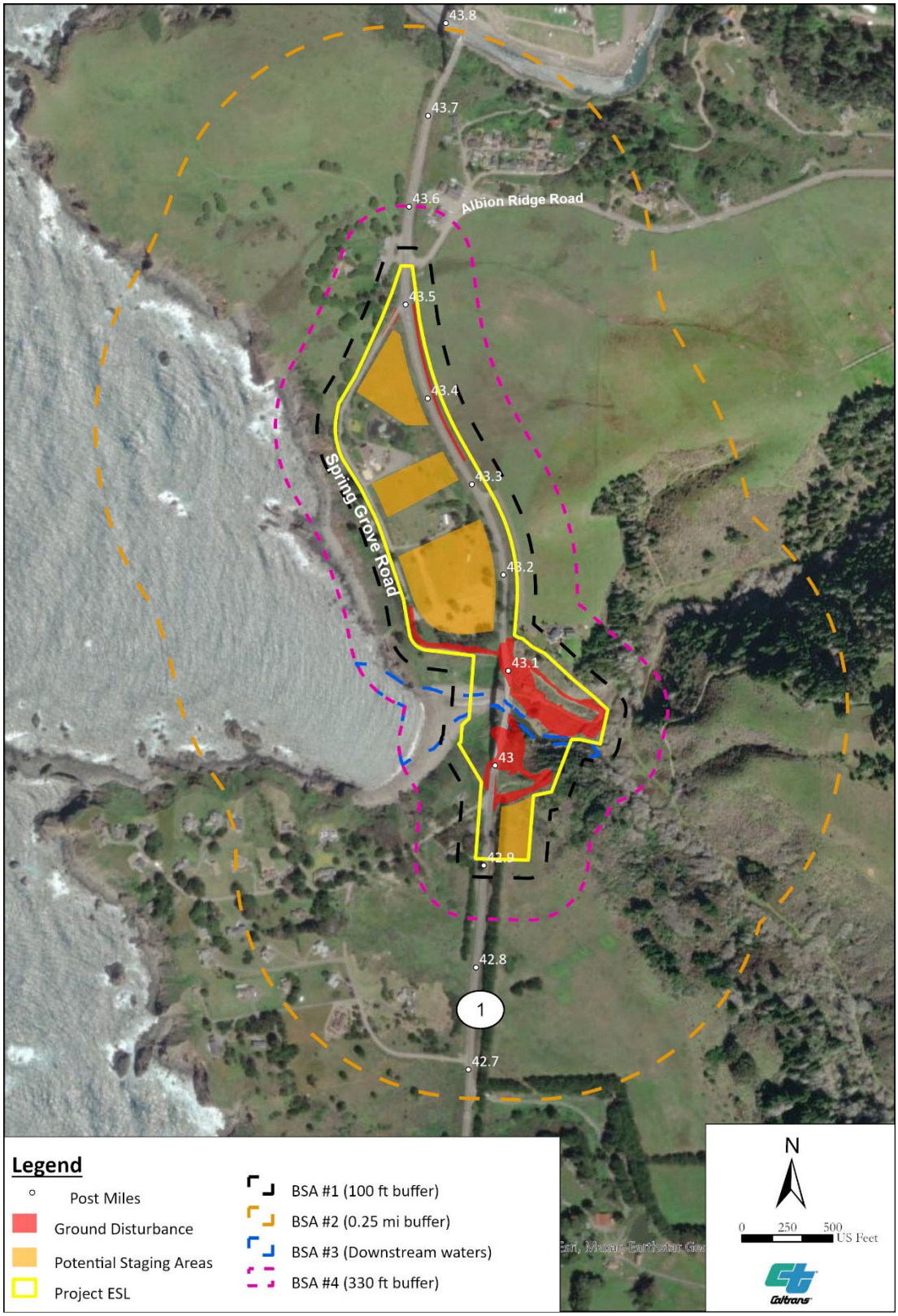

Figure 2. Environmental Study Limits and Biological Study Areas

2.2. Regulatory Requirements

Special status habitats, plant and animal species have varying degrees of legal protection under various federal, state, and local laws and regulations. The federal regulatory requirements and laws related to biological resources that apply to the proposed project include:

- Bald and Golden Eagle Protection Act
- Clean Water Act (CWA), Sections 404 and 401
- Coastal Zone Management Act (CZMA)
- Executive Order (EO) 11990 (Protection of Wetlands)
- Executive Order 13112 (Invasive Species)
- Federal Endangered Species Act (FESA)
- Magnuson-Stevens Fishery Conservation and Management ACT (MSA), as amended
- Marine Mammal Protection Act (MMPA)
- Migratory Bird Treaty Act (MBTA)
- National Environmental Policy Act (NEPA)
- National Wild and Scenic Rivers Act of 1968
- Rivers and Harbors Act (RHA)

The applicable state laws and regulations include:

- California Coastal Act (CCA)
- California Endangered Species Act of 1984 (CESA)
- California Environmental Quality Act (CEQA)
- California Fish and Game Code (CFGC), Section 1600
- California Fish and Game Code, Sections 1385-1391 (California Riparian Habitat Conservation Act)
- California Fish and Game Code, Sections 3503, 3513, and 3800
- Porter-Cologne Water Quality Control Act (Porter-Cologne Act)
- Native Plant Protection Act of 1977

2.3. Permits

Environmental Permits, Licenses, Agreements and Certifications (PLACs) needed for construction of the proposed project include:

Table 1. Agency, Type of Permit/Approval, and Status of Permits for the Proposed Project

Agency	Permit	Status
Mendocino County Planning and Building	Consolidation Request or Coastal Development Permit	Obtain after Final Environmental Document (FED) approval.
California Coastal Commission (CCC)	Coastal Development Permit	Obtain after FED approval.
California Department of Fish and Wildlife (CDFW)	1602 Agreement for Lake or Streambed Alteration (LSA)	Obtain after FED approval.
U.S. Fish and Wildlife Service (USFWS)	FESA Section 7 Informal consultation for anticipated affects to Threatened and Endangered Species and Critical Habitat	Informal consultation initiated after Draft Environmental Document (DED) Circulated.
National Marine Fisheries Service (NMFS)	FESA Section 7 Informal consultation for anticipated affects to Threatened and Endangered Species and Critical Habitat	Informal consultation initiated after Draft Environmental Document (DED) Circulated.
North Coast Regional Water Quality Control Board (NCRWQCB)	Clean Water Act Section 401 Water Quality Certification	Obtain after FED approval.
U.S. Army Corps of Engineers (USACE)	Section 404 authorization (Nationwide Permit 38) for work in Waters of the United States	Obtain after FED approval.

2.4. Studies Required

To comply with the provisions of the various federal and state environmental statutes and Executive Orders, potential impacts to natural resources within the project area were investigated and documented. Biological studies were conducted of the project footprint/ESL and BSAs as appropriate to identify existing vegetation communities, sensitive natural communities, potential jurisdictional waters and wetlands, special status species, and/or suitable habitat for special status species. These studies are discussed in detail below.

2.4.1. Records Search

Project biologists conducted initial background research by compiling a comprehensive list of special status species and sensitive natural communities that may be present within the project footprint/ESL and BSA. Available datasets and resources were queried for known special status species data and occurrences within the Albion, Mendocino, Mathison Peak, Elk, and Mallo Pass Creek United States Geological Survey (USGS) 7.5-minute quadrangles.

Information on these sensitive biological resources was obtained from the following resources:

- USFWS Environmental Conservation Online System: Information for Planning and Consultation (IPaC) list for the project locations (USFWS 2022a) (Appendix B)
- National Marine Fisheries (NMFS) West Coast Region, California Species List (NMFS 2022) (Appendix C).
- CDFW–California Natural Diversity Database (CNDDB) (CDFW 2022a) (Appendix D).
- CDFW Special Animals List (CDFW 2023)
- California Native Plant Society (CNPS)–Inventory of Rare and Endangered Plants of California (CNPS 2022a)
- United States Geological Survey: National Hydrography Dataset (NHD) (USGS 2022)
- Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2022)
- USFWS National Wetlands Inventory (NWI) data (USFWS 2022b)
- Current and historical aerial imagery (Google Earth 2022; Esri 2022)

2.4.2. Aquatic Resources Delineation

BSA #1 (primary BSA) was surveyed to identify any jurisdictional aquatic resources that may be impacted by the project. This included an assessment for the following:

- Any wetland or non-wetland Waters of the United States (WOTUS) subject to federal jurisdiction of the USACE pursuant to Section 404 of the CWA
- Any "Navigable Waters" subject to the ebb and flow of the ocean tide pursuant to Section 10 of the Rivers and Harbors Act (RHA)
- Any wetland or non-wetland Waters of the State subject to jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB) pursuant to the Porter-Cologne Water Quality Control Act and Section 401 of the CWA
- Any coastal wetlands within the Coastal Zone subject to jurisdiction of the CCC pursuant to the CCA
- Any aquatic resources with a defined bed, bank, channel, or riparian habitat subject to jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Fish and Game Code Section 1602.

The methods used to delineate jurisdictional wetlands were based on the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010).

The boundaries of any jurisdictional non-wetland WOTUS or Waters of the State were delineated at the ordinary high-water mark (OHWM) in accordance with the guidelines in USACE Regulatory Guidance Letter 05-05 (USACE 2005) and *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the united States* (Mersel and Lichvar, 2014). The OHWM represents the limit of USACE or NCRWQCB jurisdiction over non-tidal waters (e.g., rivers).

The boundaries of any "navigable waters" subject to Section 10 of the RHA, such as those within the study area near the mouth of Salmon Creek, were determined based on the elevation of the Mean High Water (MHW) line (Federal Register [FR] Doc 86-25301, 329.12.b). The MHW was primarily determined using bathymetric survey data provided by Caltrans engineers and was confirmed on-site based on the location of wrack, watermarks on hardscape, and/or other identifying characteristics.

A summary of all jurisdictional aquatic resources and their locations is provided in Section 3.2.3 and Appendix H. A more detailed description of all jurisdictional aquatic resources, their locations, and the delineation methods will be provided in the project Aquatic Resources Delineation Report.

2.4.3. Natural Community Mapping

The natural vegetation communities and non-vegetated landcover types were identified within BSA #1 based on the vegetation classification and keys in *A Manual of California Vegetation, second edition* (Sawyer et al., 2009) and online updates (CNPS 2022b). The classification is based on the dominant plant species and emphasizes natural, existing vegetation. Vegetation types within the BSA were identified at the alliance level where possible. Rarity of each vegetation type was determined from CDFW's current California Natural Communities List (CDFW 2022b), the current list of vegetation Alliances, Associations, and Special Stands, which notes which vegetation types are considered sensitive.

The state rank reflects the overall status of community throughout its California range:

- **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)–**Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
- **S4 (Apparently Secure)–**Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
- **S5 (Secure)–**Common, widespread, and abundant in the state.

For alliances with State ranks of S1, S2, and S3, all associations within them are also considered sensitive. Alliances that are not sensitive may have associations within them that are sensitive; therefore, the natural vegetation types were identified to the association level as far as possible and where necessary to determine if sensitive associations are present.

Other sensitive habitat areas include riparian habitats, which are regulated by CDFW and the RWQCB.

Field surveys to map vegetation types were conducted concurrently with the special status plants surveys and the wetlands delineation surveys. During the field surveys, Caltrans botanists identified the boundaries of each vegetation type polygon and noted dominant species and associated species.

2.4.4. Floristic Surveys

Seasonally appropriate botanical surveys were conducted within the ESL to identify any special status plant species that may be impacted by project activities. Botanical surveys were conducted in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018a). Resources used to identify plants included *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al., 2012), and internet resources, such as the Consortium of California Herbaria online specimen database (Consortium of California Herbaria 2021) and Calflora (Calflora 2022).

Caltrans biologists initially conducted floristic surveys in 2013 and 2014, and Caltrans and ICF biologists conducted updated floristic surveys in 2020 and 2021. Surveys were timed to coincide with the flowering periods of the special status plant species that could potentially occur within the ESL.

For the purposes of this evaluation, "special status plants" are those species that are legally protected or prioritized under the regulations addressed in Section 2.2. Special status plants reviewed in this NES include:

- Species listed or proposed for listing as threatened or endangered under FESA
- Species that are candidates for possible future listing as threatened or endangered under FESA
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA
- Species that meet the definitions of rare or endangered under CEQA
- Plant species listed as rare under the California Native Plant Protection Act
- Plants listed by CNPS per the California Rare Plants Ranks (CRPR) (CNPS 2022a)
    - CRPR 1 plants presumed by the CNPS to be "extinct in California"

- CRPR List 1B and 2 – Plants considered by the CNPS to be "rare, threatened, or endangered in California"
- CRPR List 3 – Plants listed by CNPS as plants about which more information is needed to determine their status, which may be included as special status species on the basis of local significance or recent biological information.
- CRPR List 4 – Plants with limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

During the field surveys, the botanists recorded all plants observed within the project ESL. Nomenclature follows *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012) and updates published online by the Jepson Flora Project (Jepson Flora Project 2022).

2.4.5. Special Status Animal Surveys and Habitat Assessments

For the purposes of this evaluation, special status wildlife species are those species that are legally protected or prioritized under the regulations addressed in Section 2.2. Special status wildlife species reviewed in this NES include:

- Species listed or proposed for listing as threatened or endangered under FESA
- Species that are candidates for possible future listing under FESA
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA
- Species that meet the definitions of rare or endangered under CEQA
- CDFW Species of Special Concern (SSC) and Fully Protected (FP) Species

The BSAs described in Section 2.1.3 were assessed for the potential to support special status wildlife species and/or their habitats via desktop review of aerial imagery and records of occurrences, site visits, and through discussions with agency personnel and species experts. General habitat assessments were conducted for all special status wildlife species provided by these record searches. Additional protocol-level surveys for federally listed butterflies were conducted in 2014, 2015, 2020, and 2021. These surveys are described below.

Special Status Butterfly Surveys

There were two components to the federally listed butterfly species surveys: 1) habitat assessment and surveys for the larval host plants and 2) protocol surveys for butterflies. Habitat assessments for Behren's silverspot butterfly (*Speyeria zerene behrensii*) and lotis blue butterfly (*Lycaeides argyrognomon lotis*) were conducted by Caltrans biologists for all areas within a 330-foot buffer around the ESL (i.e., BSA #4–Butterflies) within suitable habitat. The 330-foot buffer was established based on the USFWS Behren's and lotis blue butterfly survey protocol (USFWS 2008; USFWS 2014) and the expertise of regional butterfly specialists (Arnold 2014 and 2015). These habitat assessments included focused surveys for larval host plants and were timed during the appropriate floristic periods. Early blue violet (*Viola adunca*) and harlequin lotus (*Hosackia gracilis*), both the larval host plants and adult nectar plants, were mapped throughout the Butterflies BSA (BSA #4).

Richard Arnold of Entomological Consulting Services detailed efforts to locate lotis blue butterfly and Behren's silverspot butterfly in a memo to Caltrans dated September 26, 2014. Four field surveys were completed for Behren's silverspot butterfly in 2014 (June 23–24, July 15–16, 25–27, and August 22–24) throughout the Butterflies BSA (BSA #4) (Arnold 2014). In 2015, four additional surveys (between April and August) were conducted for the Behren's silverspot and lotis blue butterflies to capture the flight season of this species and the onset of harlequin lotis blooming (Arnold 2015). Survey methods followed the *Draft Protocol for Presence-Absence Surveys of the Endangered Lotis Blue Butterfly* (USFWS 2008) and *Draft Guidelines for Habitat Assessments and Surveys for Behren's Silverspot Butterfly (Speyeria zerene behrensii)* and consisted of hiking throughout accessible parcels where permission to enter had been obtained and surveying inaccessible properties using binoculars.

Butterfly surveys are generally considered acceptable for a maximum of 5 years, and surveys were repeated in 2020 and 2021. Caltrans biologist Dawn Graydon performed three focused surveys for lotis blue butterflies from May 15 to July 1, 2020. Surveys for host plants were conducted by Caltrans biologists in 2020. Surveys for Behren's silverspot butterfly were conducted from August 1 to September 15, 2021. Surveys for host plants and butterflies were appropriately timed to coincide with host plant blooming periods. Methods followed the 2015 surveys and consisted of hiking through accessible parcels and surveying inaccessible areas using binoculars.

2.4.6. Personnel and Survey Dates

The following table indicates the type of survey conducted, survey date(s), and survey personnel:

Table 2. Survey Conducted, Date(s) of Survey, and Personnel

Survey Conducted	Date	Personnel
Preliminary site visit	9/14/2012	*Caltrans:* Christine Lan, Katie Thoreson, Eric Lund, Steven Hughes
Botanical survey and butterfly habitat assessment surveys—spring; survey for general biological resources, including birds and wetlands	4/23–25/2013	*Caltrans:* Dana York, James McIntosh, Katie Thoreson, Christine Lan
Botanical survey and butterfly habitat assessment surveys—summer; survey for general biological resources, including birds and Waters of the United States	6/18–20/2013	*Caltrans:* Dana York, James McIntosh, Katie Thoreson, Christine Lan
Site visit to determine blooming status for butterfly larval host plants	3/26/2014	*Caltrans:* Katie Thoreson, Christine Lan
Botanical survey and butterfly habitat assessment surveys—spring; wetlands and Other Waters of the United States delineation	5/13–14/2014	*Caltrans*: James McIntosh, Katie Thoreson
Wetlands and Other Waters of the United States delineation	6/4–6/2014	*Caltrans:* Susan Leroy, Lisa Embree, Roz Litzky, Sean Marquis, Katie Thoreson
Botanical survey and butterfly habitat assessment surveys—summer; wetlands delineation	6/16–17/2014	*Caltrans:* Hilary Hodson, Katie Thoreson
Special status butterfly surveys	6/23–24/2014 7/15–16/2014 7/25–27/2014 8/22–24/2014	*Entomological Consulting Services:* Robert Jensen, Richard Arnold
Botanical survey for rare plant species and mapping of vegetation alliances	8/27–29/2014	*Caltrans*: Hilary Hodson, Katie Thoreson

Survey Conducted	Date	Personnel
Wetlands delineation; mapping of vegetation alliances	12/17–18/2014	*Caltrans:* Lisa Embree, Katie Thoreson
Site review to discuss geotechnical investigations	3/5/2015	*Caltrans:* Eric Lund, Bill Bertucci, Katie Thoreson, Steve Werner
Special status butterfly surveys	4/17–18/2015 4/29–30/2015 5/15–16/2015 5/29–30/2015 6/12–13/2015	*Entomological Consulting Services:* Robert Jensen, Richard Arnold
Wetlands delineation and snowy plover survey	5/11–13/2015 6/15–17/2015	*Caltrans:* Hilary Hodson-Sundeen, Katie Thoreson
Special status butterfly surveys	7/4–5/2015 7/17–19/2015 8/8–9/2015	*Entomological Consulting Services:* Robert Jensen, Richard Arnold
Ordinary high water mark, wetlands delineation of new parcel, and vegetation assessment	6/27/2017	*ICF:* Jordan Mayor, Torrey Edell
Habitat assessment and breeding bird surveys	6/28/2017 5/15/2020	*ICF:* Amy Poopatanapong *Caltrans:* Dawn Graydon, Jeremy Pohlman
Bat surveys	6/25/2019	*Caltrans:* Jeremy Pohlman, James McIntosh
Tidewater goby eDNA sampling	07/17/2019	*Caltrans:* Dawn Graydon, Jeremy Pohlman *ICF:* Manna Warburton
Special status butterfly habitat assessment and protocol surveys	5/15–10/01/2020	*Caltrans:* Dawn Graydon, Jeremy Pohlman
Botanical surveys for special status plant species and larval host plants	4/21–23/2020 5/26–29/2020 7/14–17/2020	*ICF:* Margaret Widdowson, Jordan Mayor, Devin Jokerst, Renee Richardson *Caltrans:* Jeremy Pohlman

Survey Conducted	Date	Personnel
Aquatic resources delineation surveys	5/26–29/2020 7/14–17/2020	*ICF:* Margaret Widdowson, Jordan Mayor, Devin Jokerst, Renee Richardson
Tidewater goby eDNA sampling	09/23/2020	*Caltrans:* Jeremy Pohlman
Special status butterfly habitat assessment and protocol surveys	8/01–9/15/2021	*Caltrans:* Dawn Graydon

2.5. Agency Coordination and Professional Contacts

The following table indicates the coordination effort, date of coordination, and participating agencies and personnel.

Table 3. Agency Coordination and Professional Contacts

Coordination Effort	Date	Personnel
Email correspondence on federally listed species to consider for the bridge replacement project	9/12/2012	Katie Thoreson, Caltrans Greg Schmidt, USFWS
Email correspondence on the need to conduct focused surveys for federally listed butterfly species and to approve qualified surveyors	4/22/2013	Katie Thoreson, Caltrans Greg Schmidt, USFWS
Email correspondence on federally listed species to consider for the bridge replacement project	8/06/2013	Katie Thoreson, Caltrans Joel Casagrande, NMFS
Email correspondence with USFWS concerning potential impacts to tidewater goby.	8/07/2013	Katie Thoreson, Caltrans Greg Schmidt, USFWS Steve Kramer, USFWS
Phone conversation with NMFS to discuss the potential for marine mammals to be near the project site. NMFS suggested studying auditory impacts to all 5 marine mammal auditory groups, to determine species list.	1/03/2017	Hilary Hodson, Caltrans Penny Ruvelas, NMFS

Coordination Effort	Date	Personnel
Site visit with CDFW, NMFS, ICF and Caltrans to discuss bridge replacement and potential mitigation at Schooners Landing.	6/28/2017	Frank Demling, Caltrans Sandra Rosas, Caltrans Kelly Garrett, Caltrans Liza Walker, Caltrans Kristine Pepper, Caltrans Hilary Hodson, Caltrans Rebecca Law, Caltrans Gordon Leppig, CDFW Jennifer Garrison, CDFW Rebecca Garwood, CDFW Daniel Harrington, CDFW Darren Howe, NMFS Brian Meux, NMFS Adam Wagschal, ICF Jordan Mayor, ICF Gabrielle Levine, Schooners Landing
Phone conversation with USFWS to confirm the need for updated butterfly surveys for the waste abatement and bridge replacement projects and to approve qualified surveyors.	5/29/2019	Jeremy Pohlman, Caltrans Greg Schmidt, USFWS
Attended office hours with USFWS to discuss tidewater goby sampling within Salmon Creek.	07/11/2019	Cari Williams, Caltrans Jeremy Pohlman, Caltrans Liza Walker, Caltrans Stephanie Frederickson, Caltrans Greg Schmidt, USFWS
Attended office hours with USFWS to continue butterfly technical assistance	11/26/2019	Dawn Graydon, Caltrans Hilary Hodson, Caltrans Jeremy Pohlman, Caltrans Liza Walker, Caltrans Stephanie Frederickson, Caltrans Greg Schmidt, USFWS
Email correspondence to approve qualified butterfly surveyors for 2020 and 2021 surveys.	03/16/2020	Jeremy Pohlman, Caltrans Gregory Schmidt, USFWS
Field review to discuss potential for federally listed species for bridge replacement and waste abatement projects and to continue butterfly technical assistance.	10/21/2020	Dawn Graydon, Caltrans Jeremy Pohlman, Caltrans Clint Pogue, USFWS Greg Schmidt, USFWS
Meeting to discuss future survey efforts and consultation needs and to continue technical assistance for listed butterfly species.	1/19/2021	Dawn Graydon, Caltrans Jeremy Pohlman, Caltrans Liza Walker, Caltrans Stephanie Frederickson, Caltrans Clint Pogue, USFWS Greg Schmidt, USFWS

Coordination Effort	Date	Personnel
Meeting to discuss future survey efforts and consultation needs and to continue technical assistance for listed butterfly species.	2/03/2021	Dawn Graydon, Caltrans Jeremy Pohlman, Caltrans Liza Walker, Caltrans Stephanie Frederickson, Caltrans Clint Pogue, USFWS Greg Schmidt, USFWS
Meeting to confirm "no effect" determination for tidewater goby for the waste abatement project and provide an update on potential butterfly effect determinations	06/09/2021	Jeremy Pohlman, Caltrans Liza Walker, Caltrans Stephanie Frederickson, Caltrans Greg Schmidt, USFWS

2.6. Limitations That May Influence Results

Botanical and wildlife surveys occurred over the course of several seasons, with updates in 2020 and 2021. Typically, butterfly surveys are considered by USFWS to be valid for a maximum of five years. Similarly, the USACE considers aquatic resources delineation reports and CDFW considers some botanical surveys to expire after five years, even if the project or project area has not substantially changed. For this reason, butterfly surveys, protocol-level surveys for plants, and new mapping of wetlands and revisiting of other wetlands took place in the spring and summer of 2020, 2021, and 2022. All surveys were performed by qualified biologists according to standard federal and state protocols.

Changes in the proposed project scope could result in changes to the assessments in this document. If any changes are made or additional work added, this NES would no longer be considered valid and an updated NES would be required.

CHAPTER 3. ENVIRONMENTAL SETTING

This chapter describes the region in which the project would occur and explains the natural resources present within the ESL and BSA(s) to better inform the context and intensity of potential impacts from the proposed project. This chapter also describes the project area's physical conditions (including climate, topography, geology/soils, habitat, hydrology, watercourses, and level of human or natural disturbance) and biological conditions (including vegetation, special status species, common wildlife, habitat connectivity, dispersal/migration corridors, aquatic resources, and invasive species).

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Study Area

The project ESL is in Mendocino County on State Route (SR) 1 between PM 42.4 and PM 43.3, approximately 16 miles south of the city of Fort Bragg and 1 mile south of the community of Albion. The project ESL is entirely within the Albion 7.5-minute U.S. Geological Survey (USGS) quadrangle. Under the Public Land Survey System, the project is within Sections 21 and 28 in Township 16 North, Range 17 West.

The project ESL is located on the immediate coastline in Mendocino County, situated above and adjacent to the mostly estuarine reach of Salmon Creek, where it flows into Whitesboro Cove and the Pacific Ocean.

3.1.2. Physical Conditions

The project ESL is entirely within the *Coast Range* ecoregion, a region consisting of coastal headlands, marine terraces, sand dunes and beaches on the immediate coast, and an inland coastal mountain range which is dominated by highly productive evergreen forests. The project ESL is adjacent to and below SR 1, a north-south trending, 2-lane winding highway with intermittent passing lanes and occasional paved or gravel pullouts.

Climate

The project ESL is entirely within the warm-summer Mediterranean climate subtype, known for its cool, wet winters and warm, dry summers (U.S. Climate Data 2022). Based on over 100 years of records at the Fort Bragg station (043161), monthly average temperatures range from 44.8 to 60.6 degrees Fahrenheit (°F). Average annual rainfall in the immediate region is approximately 40.2 inches, with the majority falling between the months of December and March (Western Regional Climate Center 2022).

Land Use

Land in the project ESL includes SR 1 and associated Caltrans right of way, Spring Grove Road, and several privately-owned parcels on the east and west sides of SR 1. Predominant land uses in the survey area include private residences, one business, and ranch/open space properties. SR 1 passes through the northern portion of the project ESL and above the ESL via Salmon Creek Bridge.

Topography

The topography of the project area is relatively flat along the areas of marine terrace and beach habitat but becomes increasingly steep across transitions from marine terrace bluffs to the river bottom beneath Salmon Creek Bridge. Elevations vary from sea level to 250 feet above mean sea level (amsl).

Geology/Soils

The area is on the far west edge of the Northern Coast Ranges subset of the Coast Ranges Geomorphic Province (Schoenherr 2017). The Coast Ranges are north-west trending mountain ranges (typically 2,000 to 4,000 feet elevation amsl) and valleys that run subparallel to the San Andreas Fault. The province is bordered to the west by the Pacific Ocean, to the east by the Great Valley Geomorphic Province, to the south by the Transverse Ranges of southern California, and to the north by the Klamath Mountain Range (Schoenherr 2017).

Natural Resources Conservation Service (NRCS) soil survey data for Mendocino County indicated four soil map unit types mapped in the survey area (NRCS 2022) (Table 4).

Table 4. NRCS Soil Types within the Project Area

Soil Unit Name	Description
Biaggi loam	These soils typically occur on marine terraces and are moderately deep and well-drained. Permeability is moderate and available water capacity is low.
Cabrillo-Heeser complex	This soil complex occurs on marine terraces. Cabrillo soils are very deep and somewhat poorly drained, and permeability is moderately slow and available. Heeser soils are very deep and somewhat excessively drained.
Dystropepts	These soils occur on side slopes of marine terraces. Dystropepts are shallow or moderately deep to bedrock and well drained.
Mallopass loam	These soils occur on marine terraces and are moderately well-drained.

Hydrology

The project area is entirely within the Big Salmon Creek watershed (Hydrologic Unit Code [HUC] 180101080802), which encompasses 13 square miles (8,500 acres) (USGS 2022). The Big Salmon Creek watershed is bordered by the Albion River (HUC 180101080803) and Little River-Frontal Pacific Ocean (HUC 180101080803) watersheds to the north, and to the south by the Lower Navarro River (HUC 180101080409) and Little River-Frontal Pacific Ocean watersheds.

Little Salmon Creek flows into Big Salmon Creek approximately 600 feet east of the Salmon Creek Bridge, forming Salmon Creek, a 900-foot segment of tidally influenced stream that flows directly into the Pacific Ocean at Whitesboro Cove.

Wetlands are present in topographically low areas adjacent to Salmon Creek and within depressions fed by channelized drainages or subsurface seeps along terrace slopes. Smaller earthen ditches that convey run-off are also present along some of the dirt roads within the project area.

3.1.3. Biological Conditions

Vegetation Land Cover Types

Twenty-two vegetation and land cover types were mapped within the BSA. Vegetation types were identified per the classification system described in *A Manual of California Vegetation* (Sawyer et al., 2009), and online updates maintained by CNPS (2022b). Of the 17 vegetation types (alliances and associations) identified, 7 are considered SNC by CDFW, based on CDFW's current *California Natural Communities List* (CDFW 2022b). Additional land cover types include unvegetated beach, unvegetated open water, developed, and landscaped areas. Vegetation and land cover types mapped within BSA #1 are shown in Appendix G.

Grand Fir Forest

Stands of grand fir forest occur east of Salmon Creek above the Salmon Creek floodplain. Grand fir forests are dominated by grand fir (*Abies grandis*) and support subdominant species that include salal (*Gaultheria shallon*) and California hazel (*Corylus cornuta*). Grand fir forest is a S2/G4 ranked community and considered sensitive by CDFW (CDFW 2022b).

Red Alder Forest

Stands of red alder forest border Little Salmon Creek within BSA #1, and a small patch is present along the south bank of Big Salmon Creek. This vegetation alliance is dominated by red alder (*Alnus rubra*) with arroyo willow (*Salix lasiolepis)*. California blackberry (*Rubus ursinus*) is abundant in the understory. Herbaceous species include sword fern (*Polystichum munitum*), cow parsnip (*Heracleum maximum*), giant horsetail (*Equisetum telmateia*), coast manroot (*Marah oregana*), and stinging nettle (*Urtica dioica*). Red alder forest is an S4/G5 ranked community and, while not considered a SNC by CDFW, is considered riparian habitat which is regulated under CGFC Section 1602 (CDFW 2022).

Salmonberry–Wax Myrtle Scrub

Salmonberry–Wax Myrtle Scrub (*Morella californica–Rubus* spp. Association) occurs along both sides of Salmon River Bridge within BSA #1. This community is dominated by wax myrtle (*Morella californica*) with other shrub species, such as coyote brush (*Baccharis pilularis*), California blackberry, arroyo willow, and silk tassel (*Garrya elliptica*). The understory is dominated by sword fern, coast manroot, California bee plant (*Scrophularia californica*), and poison hemlock (*Conium maculatum*). This community is an S3/G3 ranked community and considered sensitive by CDFW (CDFW 2022).

Non-native Eucalyptus

A grove of nonnative blue gum/eucalyptus (*Eucalyptus globulus*) trees is found growing southwest of the Salmon Creek Bridge at the end of the private drive, Pacific Reefs Road, leading to the local water authority facility. This community is not ranked and not considered sensitive by CDFW (CDFW 2022).

Monterey Cypress–Monterey Pine Woodland Stands

Along SR 1 and public roads, there are stands of planted Monterey cypress (*Hesperocyparis macrocarpa*), Monterey pine (*Pinus radiata*), and blue gum (*Eucalyptus globulus*). This community is not ranked and not considered sensitive by CDFW (CDFW 2022).

Arroyo Willow Thicket

Arroyo willow thickets occur on the south-facing slope beneath the northern bridge abutment and in distinct patches adjacent to Spring Grove Road. Arroyo willow thickets are dominated by arroyo willow, with subdominant species such as California wax myrtle, red elderberry (*Sambucus racemosa*), and thimbleberry. The understory is dominated by such herbaceous species as stinging nettle, poison hemlock, cow parsnip, hedge nettle (*Stachys ajugoides*), sword fern, coastal wood fern (*Dryopteris arguta*), and false Solomon's seal (*Maianthemum racemosum*). Arroyo willow thickets is an S4/G4 ranked community and, while not considered a SNC by CDFW, is considered riparian habitat which is regulated under CGFC Section 1602 (CDFW 2022).

Salal–Berry Brambles

Salal–berry brambles (*Rubus ursinus* Association) occur in mesic grasslands, along drainages, in the Big Salmon Creek floodplain in drainages and sheltered swales that receive less salt spray than the coyote brush scrub, and along adjacent north-facing slopes. Within BSA #1, this community is dominated by California blackberry, with other species such as blue blossom (*Ceanothus thyrsiflorus*), thimble berry, poison-oak, and Himalayan blackberry (*Rubus armeniacus*). The understory often includes bracken fern (*Pteridium aquilinum*), giant horsetail, sword fern, hedge nettle, Douglas iris (*Iris douglasiana*), sweet vernal grass (*Anthoxanthum odoratum*), and velvet grass (*Holcus lanatus*). This community is an S4/GNR ranked community and is not considered sensitive by CDFW (CDFW 2022).

Coyote Brush Scrub (Garrya elliptica Association) Provisional Alliance

Coyote brush scrub (*Garrya elliptica* association), dominated by coastal silk tassel, occurs along the steep north-facing slope above Big Salmon and Salmon creeks within BSA #1. This vegetation alliance is dominated by silk tassel with minor components of wax myrtle, coyote brush, sword fern, salal, and thimbleberry (*Rubus parviflorus*). This alliance is considered provisional, which indicates sufficient data exists to propose the alliance, but not sufficient data to determine its status in California. This community is not ranked and not considered sensitive by CDFW (CDFW 2022)

Coyote Brush Scrub

Coyote brush scrub can be found intermittently throughout BSA #1. Coyote brush scrub consists of a shrub layer dominated by coyote brush, with other co-dominants including California blackberry, sword fern, California blackberry, thimbleberry, bracken fern, and poison-oak (*Toxicodendron diversilobum*). Other species include salal, California coffeeberry (*Frangula californica*), and sticky monkey–flower (*Diplacus aurantiacus*). Coyote brush scrub is an S5/G5 ranked community and not considered sensitive by CDFW (CDFW 2022).

Seaside Woolly-Sunflower - Seaside Daisy - Buckwheat Patches

Seaside woolly-sunflower–seaside daisy–buckwheat patches is present on a rock outcrop slope above Spring Grove Road near the north side of Salmon Creek Bridge. In BSA #1, this community is co-dominated by sea-cliff stonecrop (*Dudleya farinosa*), coast buckwheat (*Eriogonum latifolium*), coyote brush, and sticky monkeyflower. This community is an S3/G3 ranked community and is considered sensitive by CDFW (CDFW 2022). Pacific gilia (*Gilia capitata* ssp. *pacifica*; CRPR 1B.2), a special status plant addressed in Section 4.2.5, is present in this vegetation type within the BSA.

Poison Oak Scrub

Poison oak scrub occurs within the southeastern portion of BSA #1. Poison oak scrub is dominated by poison oak and intergrades with coyote brush, California blackberry, and velvet grass–sweet vernal grass meadows. Poison oak scrub is an S4/GS ranked community and is not considered sensitive by CDFW (CDFW 2022).

Dune Mat

Dune mat (*Abronia latifolia–Ambrosia chamissonis* Herbaceous Alliance) occurs in a small area west of the bridge along the north bank of Salmon Creek. Typical species include dune sagewort (*Artemisia pycnocephala*), coastal sagewort (*Ambrosia chamissonis*), and beach strawberry (*Fragaria chiloensis*). Dune mat is an S3/GS ranked community and is considered sensitive by CDFW (CDFW 2022).

Common Velvet Grass–Sweet Vernal Grass Meadows

Common velvet grass–sweet vernal grass meadows (*Holcus lanatus–Anthoxanthum odoratum* Herbaceous Semi-Natural Alliance) are the dominant coastal prairie vegetation through much of BSA #1. This community is dominated by nonnative grasses, sweet vernal grass, and velvet grass. Typical nonnative species within this community include English plantain (*Plantago lanceolata*), hairy cat's ear (*Hypochaeris radicata*), creeping bentgrass (*Agrostis stolonifera*), rattlesnake grass (*Briza maxima*), and ripgut brome (*Bromus diandrus*). Native species are present at lower densities, including hedge nettle, Douglas iris, and golden-eyed grass. Common velvet grass–sweet vernal grass meadow is not ranked and is not considered sensitive by CDFW (CDFW 2022). However, larval host plants (early blue violet and harlequin lotus [*Hosackia gracilis*; CRPR 4.2])) for two species of federally endangered butterflies are present in this vegetation type within the BSA.

Pacific Reed Grass Meadows

Pacific reed grass (*Calamagrostis nutkaensis* Herbaceous Alliance) meadows occur at two locations within BSA #1, including one at the intersection of Pacific Reefs Road and SR 1 and the other just west and downslope of SR 1 in a wet meadow adjacent to a pond maintained by the Ledford House restaurant. This community is dominated by Pacific reed grass (*Calamagrostis nutkaensis*), which may form very dense, almost mono-specific stands, or occur scattered through more diverse vegetation. Associated species include sweet vernal grass, slough sedge (*Carex obnupta*), cow parsnip, velvet grass, and California blackberry. Pacific reed grass meadows is an S2/G4 ranked community and is considered sensitive by CDFW (CDFW 2022). Swamp harebell (*Campanula californica*; CRPR 1B.2) and fringed cornlily (*Veratrum fimbriatum*; CRPR 4.3), special status plants addressed in Section 4.2.2, are present in this vegetation type within the BSA.

Idaho Fescue–California Oatgrass

Idaho fescue–California oatgrass grassland (*Festuca Rubra* association) occurs at two locations in the northeastern portion of BSA #1, both of which occur at the toe of slopes and are transitional areas between velvet grass–sweet vernal grass meadows and either coyote brush scrub or arroyo willow. This community is dominated by red fescue (*Festuca rubra*) with co-dominant species such as sweet vernal grass, velvet grass, field horsetail (*Equisetum arvense*), bedstraw (*Galium aparine),* and California blackberry. Idaho fescue–California oatgrass grassland is an S3/GNR ranked community and is considered sensitive by CDFW (CDFW 2022). Harlequin lotus, a special status plant and larval host plant of the lotis blue butterfly, was documented in this community within the BSA.

Salt Grass Flats

Salt grass flats (*Distichlis spicata* Herbaceous Alliance) occur along the sandy banks of Salmon Creek in the western extent of BSA #1. This community is co-dominated by salt grass and common threesquare (*Schoenoplectus pungens*). Salt grass flats are an S4/NR community and are not considered sensitive by CDFW (CDFW 2022).

Small-fruited Bulrush Marsh

A single occurrence of small-fruited bulrush marsh (*Scirpus microcarpus* Herbaceous Alliance) occurs along the north shore of Salmon Creek abutting arroyo willow thickets and coastal brambles. This marsh is dominated by small-fruited bulrush (*Scirpus microcarpus*) with co-dominant species such as Pacific silverweed (*Potentilla anserina* ssp. *pacifica*), water parsley (*Oenanthe sarmentosa*), giant horsetail, and common soft rush. Small-fruited bulrush marsh is an S2/G4 ranked community and is considered sensitive by CDFW (CDFW 2022).

Soft and Western Rush–Sedge Marshes

Soft and western rush–sedge marshes (*Juncus effusus* Association) occur adjacent to the pond to the northeast of Ledford House restaurant, in the pasture area east of SR 1, in roadside swales along Spring Grove Road, and in a small area above the northeast bridge abutment. This community is dominated by soft rush and nonnative Chinese silver grass (*Miscanthus sinensis*). Soft rush marshes are an S4/G4 ranked community and are not considered sensitive by CDFW (CDFW 2022).

Beach–Unvegetated

Unvegetated beach occurs within BSA #1 along Salmon Creek west of the bridge, where tidal influence precludes vegetated cover.

Developed/Paved and Landscaped

This landcover type occurs throughout the BSA #1 and comprises paved and gravel roads and built structures that are unvegetated or primarily support sparse ruderal and/or ornamental or managed vegetation around homes, businesses, and roads. Around private residences within BSA #1, common landscaped plants include creeping capeweed (*Arctotheca prostrata*), Calla lily (*Zantedeschia aethiopica*), and bulbil bugle-lily (*Watsonia meriana*).

Habitat Connectivity

Dispersal/Migration Corridors

The California Essential Habitat Connectivity (CEHC) Project was commissioned by Caltrans and CDFW to identify and describe wildlife movement corridors in California (CDFW 2022c). CECH Project identifies large parcels of intact habitat or natural landscape that support native biodiversity and areas essential for ecological connectivity between them (Essential Connectivity Areas [ECA]). Additionally, the CEHC Project models linkages between the ECAs that need to be maintained for use as wildlife corridor. The goal of the CEHC Project is to integrate natural resource considerations into transportation and land use planning processes. No natural landscape blocks or ECAs were identified by the CEHC Project in or adjacent to BSA #1 (CDFW 2022c). The closest natural landscape blocks are the Navarro Ridge to the southeast and Van Damme Beach State Park to the north.

Similarly, the CDFW Areas of Conservation Emphasis (ACE) is a tool that utilizes a compilation of statewide spatial information on items such as biodiversity, rarity, significant habitats, and connectivity to produce a ranking of an area's connectivity importance (CDFW 2022c). BSA #1 is within an area that has an ACE ranking of 1 and is not considered an area of known importance for connectivity (CDFW 2022c).

Although no wildlife movement corridors were identified within BSA #1, the coastal prairie and coastal scrub habitats along the eastern side of SR 1 north and south of BSA #1 would provide suitable mammal, amphibian, and avian corridors for dispersal or migration.

Additionally, upstream of Salmon, Little Salmon, and Big Salmon creeks there would be suitable dispersal aquatic habitat for amphibian and fish. Riparian habitat within BSA #1 along Salmon Creek also provides potential movement corridors for terrestrial wildlife.

Fish Passage

Salmon Creek provides seasonal habitat connectivity for several anadromous fish species (Section 4.3.3). The estuary mouth is intermittently restricted or closed, and there are months when the creek is not connected to the Pacific Ocean by surface water sufficient to provide fish passage. Connection is presumed to occur following high precipitation events in the winter and early spring when the sand bar is breached naturally.

Invasive Species

Roads, highways, and related construction projects are some of the principal dispersal pathways for invasive plant species. The introduction and spread of invasive plants adversely affects natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Plants identified in BSA #1 as federal noxious weeds (USDA 2012), state noxious weed species designated by the California Department of Food and Agriculture (CDFA 2003), and invasive plants identified by the California Invasive Plant Council (Cal-IPC) (Cal-IPC 2017) are noted in the Botanical Inventory–Appendix F. No federal noxious weeds were observed within BSA #1.

3.2. Regional Species and Habitats and Natural Communities of Special Concern

Special status species known or likely to occur within the project region were identified based on the USFWS species list (USFWS–IPaC 2022a), NMFS species list (NMFS 2022), CNDDB records search (CDFW-CNDDB 2022a), the CNPS Inventory of Rare and Endangered Plants (CNPS 2022a), and species distribution and habitat requirements data.

For the purposes of this evaluation, "special status species" are plants or animals that are legally protected or prioritized under the regulations addressed in Section 2.2. "Special status species" is a universal term used in the scientific community for species considered sufficiently rare that they require special consideration and/or protection and should be, or have been, listed as rare, threatened or endangered by the Federal and/or State governments. Special status species are defined as:

- Species listed or proposed for listing as threatened or endangered under FESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under FESA (81 FR 87246–87272, December 2, 2016).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definition of endangered, rare, or threatened species under CEQA Guidelines Section 15380, subdivisions (b) and (d), which may include:
    - Plants tracked by the California Natural Diversity Database (CNDDB) as California Rare Plant Rank (CRPR) 1 or 2; and
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This includes plants tracked by the CNDDB as CRPR 3 or 4.

  - Considered locally significant plants; that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context, such as within a county or region (CEQA Guidelines § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines–Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

- CDFW Species of Special Concern (SSC) and Fully Protected (FP) Species (California Fish and Game Code Section 3511) (CDFW 2023)

- Plant species listed as rare under the California Native Plant Protection Act (CFGC Section 1900 et seq.).

- Plants listed by CNPS per the California Rare Plants Ranks (CRPR) (CNPS 2022a)

  - CRPR 1A List – Plants presumed by the CNPS to be "extinct in California"

  - CRPR List 1B and 2 – Plants considered by the CNPS to be "rare, threatened, or endangered in California"

  - CRPR List 3 – Plants listed by CNPS as plants about which more information is needed to determine their status, which may be included as special status species on the basis of local significance or recent biological information.

  - CRPR List 4 – Plants with limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly.

- Plants and animals that meet the criteria for listing, even if not currently included on any list, as described in State CEQA Guidelines Section 15380(b), (c), and (d); species that may meet this definition include the following.

  - Plants and animals that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines 15380[d]), which may include plants rated CRPR 3 (plants about which more information is needed to determine their status) and CRPR 4 (plants of limited distribution).

- Plants and animals considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context, such as within a county or region (CEQA 15125[c]), or is so designated in local or regional plans, policies, or ordinances (Appendix G of the State CEQA Guidelines).

3.2.1. Special Status Plants

The plants listed in the table below are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; (3) and/or the presence of habitat required by the special status plants occurring on-site.

Based on the queries made to USFWS, CDFW/CNDDB and CNPS databases, 61 special status plants were identified as potentially occurring within the USGS quadrangles queried for this assessment (Table 5). However, only 37 of those species were identified as potentially occurring within BSA #1. BSA #1 either lacks suitable habitat or is outside of the elevation and/or geographic range for the remaining 24 species. Botanical surveys (Section 2.4.2.) documented occurrences of 7 special status plants within BSA #1. These species are discussed further in Section 4.2.

Table 5. Special Status Plant Species and Critical Habitat Potentially Occurring within BSA #1

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Vascular Plants						
Baker's goldfields	*Lasthenia californica* ssp. *bakeri*	--/--/1B.2	Meadows, seeps, marshes, and swamps in closed-cone coniferous forest (openings) and coastal scrub.	195–1,708	**Present**	Suitable habitat occurs in the coastal scrub and wetland habitats within BSA #1. Nearest occurrence is ~1.0 mile south of the ESL near Navarro Point. Not observed during surveys in 2013, 2014, and 2020.
Blasdale's bent grass	*Agrostis blasdalei*	--/--/1B.2	Coastal bluff scrub, coastal dune, and coastal prairies.	Sea level–490	**Present**	Suitable habitat occurs in the coastal scrub and grassland habitats within BSA #1. Nearest occurrence is ~0.4 mile south of the ESL near Navarro Point. Not observed during surveys in 2013, 2014, and 2020.
Bluff wallflower	*Erysimum concinnum*	--/--/1B.2	Coastal bluff scrub, coastal dunes, and coastal prairie.	Sea level–605	**Present**	Suitable habitat occurs in the coastal scrub and grassland habitats within BSA #1. Nearest occurrence is ~2.9 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Bolander's beach pine	*Pinus contorta* ssp. *bolanderi*	--/--/1B.2	Coastal scrub, North Coast coniferous forest; sometimes roadsides.	245–820	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Bolander's reed grass	*Calamagrostis bolanderi*	--/--/4.2	Bogs, fens, meadows, seeps, marshes, swamps, and other mesic sites in broadleafed upland forest, closed cone coniferous forest, coastal scrub, and North Coast coniferous forests.	Sea level–1,495	**Present**	Suitable habitat is present in the coastal scrub and wetland habitats within BSA #1. Nearest occurrence is ~0.5 mile northeast of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Bunchberry	*Cornus canadensis*	--/--/2B.2	Bogs, fens, meadows, and seeps in North Coast coniferous forest.	195–6,300	**Present**	Suitable habitat is present in the wetland habitats within BSA #1. Nearest occurrence is ~8 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Burke's goldfields	*Lasthenia burkei*	FE/SE/1B.1	Meadows, seeps (mesic), and vernal pools.	50–1,970	Absent	No suitable habitat present within the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
California pinefoot	*Pityopus californicus*	--/--/4.2	Mesic sites in broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest.	50–7,300	Absent	No suitable habitat present within the ESL. Not observed during surveys in 2013, 2014, and 2020.
California pitcherplant	*Darlingtonia californica*	--/--/4.2	Bogs, fens, meadows, or seeps.	Sea level–8,480	Absent	No suitable habitat present within the ESL. Not observed during surveys in 2013, 2014, and 2020.
California sedge	*Carex californica*	--/--/2B.2	Along the margins of bogs, fens, meadows, seeps, marshes, and swamps in closed-cone coniferous forest, and coastal prairie.	295–1,100	**Present**	Suitable habitat is present in the wetland habitats within BSA #1. Nearest occurrence is ~1 mile east of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Coast lily	*Lilium maritimum*	--/--/1B.1	Marshes and swamps in broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, and North Coast coniferous forest; Sometimes roadsides.	15–1,560	**Present**	Suitable habitat is present in the coastal scrub, grassland, and freshwater habitats within BSA #1. Nearest occurrence is ~1.5 miles east of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Coastal bluff morning-glory	*Calystegia purpurata* ssp. *saxicola*	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, and North Coast coniferous forests.	Sea level–345	**Present**	Suitable habitat is present in the coastal scrub habitats within BSA #1. Nearest occurrence is ~0.2 mile west of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Contra Costa goldfields	*Lasthenia conjugens*	FE/--/1B.1	Vernal pools and other mesic sites in cismontane woodland, playas (alkaline), and valley and foothill grasslands.	Sea level–1,540	Absent	No suitable habitat is present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Dark-eyed gilia	*Gilia millefoliata*	--/--/1B.2	Coastal dunes.	5–100	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Deceiving sedge	*Carex saliniformis*	--/--/1B.2	Meadows, seeps, and coastal salt marshes and swamps in coastal prairie and coastal scrub.	10–755	**Present**	Suitable habitat is present in the coastal scrub habitat within BSA #1. Nearest occurrence is ~5.5 miles south of the BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Fringed cornlily	*Veratrum fimbriatum*	--/--/4.3	Bogs, fens, meadows, seeps, and other mesic sites in coastal scrub and North Coast coniferous forests.	10–985	**Present**	Suitable habitat is present in the coastal scrub, wetland, and riparian habitat within BSA #1. ***Documented within the southwest portion of BSA #1 during 2013, 2014, and 2020 surveys.***
Glory brush	*Ceanothus gloriosus* var. *exaltatus*	--/--/4.3	Chaparral	100–2,000	Absent	No suitable habitat within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Great burnet	*Sanguisorba officinalis*	--/--/2B.2	Bogs, fens, meadows, seeps, marshes, and swamps, in broadleafed upland forest, North Coast coniferous forest, and riparian forests; often found on serpentine soils.	195–4,595	**Present**	Suitable habitat is present in the wetland habitats within BSA #1. Nearest occurrence is ~0.3 mile east of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Hair-leaved rush	*Juncus supiniformis*	--/--/2B.2	Freshwater bogs, fens, marshes, and swamps along the coast.	65–330	Absent	No suitable habitat is present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Harlequin lotus	*Hosackia gracilis*	--/--/4.2	Meadows, seeps, marshes, and swamps in broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, North Coast coniferous forest, and valley and foothill grasslands; often along roadsides.	Sea level–2,295	**Present**	Suitable habitat is present in the coastal scrub, grassland, and wetland habitats within BSA #1. ***Documented in several locations within BSA #1 during 2013, 20'4, and 2020 surveys.***
Hoffman's bristly jewelflower	*Streptanthus glandulosus* ssp. *hoffmanii*	--/--/1B.3	Chaparral, cismontane woodlands, and valley and foothill grassland.	395–1,560	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Howell's spineflower	*Chorizanthe howellii*	FE/ST/1B.2	Sandy, often disturbed areas in coastal dunes, coastal prairie, and coastal scrub.	Sea level–150	**Present**	Suitable habitat is present in the coastal scrub and grassland habitats within BSA #1. There are no occurrences within 10 miles of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Humboldt Bay owl's-clover	*Castilleja ambigua* var. *humboldtiensis*	--/--/1B.2	Coastal salt marshes and swamps.	Sea level–10	Absent	No suitable habitat is present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Humboldt County milk-vetch	*Astragalus agnicidus*	--/SE1B.1	Broadleafed upland forest and North Coast coniferous forests; often found in openings, disturbed areas, and sometimes along roadsides.	395–2,625	Absent	No suitable habitat is present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Leafy-stemmed mitrewort	*Mitellastra caulescens*	--/--/4.2	Meadows, seeps, and other mesic sites in broadleafed upland forest, lower montane coniferous forest, and North Coast coniferous forest; sometimes along roadsides.	15–5,580	**Present**	Suitable habitat is present in the wetland habitats within BSA #1. ***Documented in several locations within BSA #1 during 2013, 2014, and 2020 surveys.***
Livid sedge	*Carex livida*	--/--/2A	Bogs and fens. (This species is only known from a single collection in 1866 and has not been documented since.)	Unknown	Absent	No suitable habitat within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Lyngbye's sedge	*Carex lyngbyei*	--/--/2B.2	Marshes and swamps (brackish or fresh water).	Sea level–35	Absent	No suitable habitat within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Maple-leaved checkerbloom	*Sidalcea malachroides*	--/--/4.2	Broadleafed upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, and riparian woodland; often in disturbed areas.	Sea level–2,395	**Present**	Suitable habitat is present in the coastal scrub grassland and riparian habitats within BSA #1. Nearest occurrence is ~1.5 mile north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Marsh pea	*Lathyrus palustris*	--/--/2B.2	Bogs, fens, marshes, and swamps in lower montane coniferous forest, North Coast coniferous forest, coastal prairie, and coastal scrub.	5–330	**Present**	Suitable habitat is present in the coastal scrub and grassland habitats within BSA #1. Nearest occurrence is ~5.6 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Mendocino Coast paintbrush	*Castilleja mendocinensis*	--/--/1B.2	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal prairie, and coastal scrub.	Sea level–525	**Present**	Suitable habitat is present in the coastal bluff scrub and grassland habitats within BSA #1. Nearest occurrence is ~0.2 mile west of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Mendocino dodder	*Cuscuta pacifica* var. *papillata*	--/--/1B.2	Coastal dunes (interdune depressions).	Sea level–165	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Monterey clover	*Trifolium trichocalyx*	FE/SE/1B.1	Closed-cone coniferous forest (sandy, openings, burned areas).	100–1,000	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Monterey cypress	*Hesperocyparis macrocarpa*	--/--/1B.2	Closed-cone coniferous forest; Known from only two native occurrences in the Monterey, CA area; widely planted and naturalized elsewhere.	35–100	Absent	BSA #1 is outside of the accepted native range of the species. While several Monterey cypress trees were documented in BSA #1, they are all planted and considered naturalized.
Nodding semaphore grass	*Pleuropogon refractus*	--/--/4.2	Meadows, seeps, and other mesic sites in lower montane coniferous forest, North Coast coniferous forests, and riparian forests.	Sea level–5,250	**Present**	Suitable habitat is present in meadow and coniferous forest habitat within BSA #1. Nearest occurrence is ~8 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
North Coast phacelia	*Phacelia insularis* var. *continentis*	--/--/1B.2	Sandy, sometimes rocky areas in coastal bluff scrub and coastal dunes.	35–560	**Present**	Suitable habitat is present in coastal bluff scrub and grassland habitats BSA #1. No occurrences within 10 miles of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Northern microseris	*Microseris borealis*	--/--/2B.1	Bogs, fens, meadows, seeps, and other mesic sites in lower montane coniferous forests.	3,280–6,560	Absent	ESL is outside the accepted geographic and elevation range of this species. Not observed during surveys in 2013, 2014, and 2020.
Oregon coast paintbrush	*Castilleja litoralis*	--/--/2B.2	Sandy soils in coastal bluff scrub and coastal dunes.	50–330	**Present**	Suitable habitat is present in coastal bluff scrub habitats within BSA #1. ***Observed on the cliff face along Spring Grove Road during 2013 and 2014 surveys.***
Oregon goldthread	*Coptis laciniata*	--/--/4.2	Meadows, seeps, and streambanks in North Coast coniferous forest.	Sea level–3,280	**Present**	Suitable habitat is present in wetland habitats within BSA #1. Nearest occurrence is within 1 mile of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Pacific gilia	*Gilia capitata* ssp. *pacifica*	--/--/1B.2	Openings in coastal bluff scrub, chaparral, coastal prairie, and valley and foothill grassland.	15–5,465	**Present**	Suitable coastal bluff scrub habitat present within the ESL. ***Observed on the cliff face along Spring Grove Road during 2013, 2014, and 2021 surveys.***
Pacific golden saxifrage	*Chrysosplenium glechomifolium*	--/--/4.3	Streambanks, sometimes seeps, sometimes roadsides in North Coast coniferous forest and riparian forest.	35–720	**Present**	Suitable habitat is present in wetland habitats within BSA #1. Nearest occurrence is ~4 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Perennial goldfields	*Lasthenia californica* ssp. *macrantha*	--/--/1B.2	Coastal bluff scrub, coastal scrub, grasslands, and coastal dunes along immediate coast.	15–1,705	**Present**	Suitable habitat is present in coastal bluff scrub and grassland habitats within BSA #1. Nearest occurrence is ~0.3 mile west of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Pink sand-verbena	*Abronia umbellata* var. *breviflora*	--/--/1B.1	Coastal dunes.	Sea level–35	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Point Reyes ceanothus	*Ceanothus gloriosus* var. *gloriosus*	--/--/4.3	Sandy soils in coastal bluff scrub, closed-cone coniferous forest, coastal dunes, and coastal scrub.	15–1,705	**Present**	Suitable habitat is present in coastal bluff scrub and coastal scrub habitats within BSA #1. Nearest occurrence is ~0.2 mile northeast of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Point Reyes checkerbloom	*Sidalcea calycosa* ssp. *rhizomata*	--/--/1B.2	Freshwater marshes, seeps, swamps, and other wetlands near the coast.	10–245	**Present**	Suitable habitat is present in wetland habitats within BSA #1. ***Documented within the northeast portion of the BSA during 2013, 2014, and 2020 surveys.***
Purple-stemmed checkerbloom	*Sidalcea malviflora* ssp. *purpurea*	--/--/1B.2	Coastal bluff scrub, coastal prairie, North Coast coniferous forest; often roadcuts.	50–280	**Present**	Suitable habitat is present in coastal bluff scrub habitats within BSA #1. No occurrences within 10 miles of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Pygmy cypress	*Hesperocyparis pygmaea*	--/--/1B.2	Podzol-like (acidic) soils in closed-cone coniferous forest, mixed-evergreen forest, and coastal terraces.	100–1,970	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Pygmy manzanita	*Arctostaphylos nummularia* ssp. *mendocinoensis*	--/--/1B.2	Podzol-like (acidic), sandy soils in pygmy pine forest and chaparral.	295–655	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Running-pine	*Lycopodium clavatum*	--/--/4.1	Along the margins of marshes, swamps, and other mesic sites in lower montane coniferous forest and North Coast coniferous forests; often along roadsides.	150–4,020	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Santa Cruz clover	*Trifolium buckwestiorum*	--/--/1B.1	Gravelly soils along margins of broadleafed upland forest, cismontane woodland, and coastal prairie.	345–2,000	**Present**	Marginal suitable habitat is present within grasslands within BSA #1. Nearest occurrence is ~5.3 miles east of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Seacoast ragwort	*Packera bolanderi* var. *bolanderi*	--/--/2B.2	Coastal scrub, North Coast coniferous forest/Sometimes roadsides.	100–2,135	**Present**	Suitable habitat is present within coastal bluff scrub habitats within BSA #1. Nearest occurrence is ~5.5 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Sea-watch	*Angelica lucida*	--/--/4.2	Coastal bluff scrub, coastal dunes, coastal scrub, and coastal saltwater marshes and swamps.	0–490	**Present**	Suitable habitat is present in coastal bluff scrub and coastal scrub habitats within BSA #1. Nearest occurrence is ~6.0 miles north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Short-leaved evax	*Hesperevax sparsiflora* var. *brevifolia*	--/--/1B.2	Sandy soils in coastal bluff scrub, coastal dunes, and coastal prairie.	0–705	**Present**	Suitable habitat is present in coastal bluff scrub and grassland habitats within BSA #1. Nearest occurrence is ~0.7 mile north of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Showy Indian clover	*Trifolium amoenum*	FE/--/1B.1	Usually found in moist, heavy soils in disturbed areas in coastal bluff scrub, and valley and foothill grasslands; sometimes found on serpentine soils.	15–1,360	Absent	The ESL is outside the accepted geographic range of the species. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Siskiyou checkerbloom	*Sidalcea malviflora* ssp. *patula*	--/--/1B.2	Coastal bluff scrub, coastal prairie, and North Coast coniferous forest; often roadcuts.	50–4,035	**Present**	Suitable habitat is present in coastal bluff scrub and grassland habitats within BSA #1. Nearest occurrence is ~0.6 mile south of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Small groundcone	*Kopsiopsis hookeri*	--/--/2B.3	North Coast coniferous forest.	295–2,905	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.
Supple daisy	*Erigeron supplex*	--/--/1B.2	Coastal bluff scrub and coastal prairie.	35–165	**Present**	Suitable habitat is present in coastal bluff scrub and grassland habitats within BSA #1. Nearest occurrence is ~3.2 miles northwest of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Swamp harebell	*Campanula californica*	--/--/1B.2	Bogs, fens, meadows, seeps, and other mesic sites in closed-con' coniferous forest, coastal prairie, and North Coast coniferous forests.	5–1,330	**Present**	Suitable habitat is present in wetland habitats within BSA #1. ***Documented within BSA #1 west of SR 1 during 2013, 2014, and 2020 surveys.***

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Thurber's reed grass	*Calamagrostis crassiglumis*	--/--/2B.1	Marshes, swamps, and swales in coastal grasslands and coastal scrub.	35–195	**Present**	Suitable is present in coastal bluff scrub and wetland habitats within BSA #1. Nearest occurrence is ~5.7 miles northwest of the ESL. Not observed during surveys in 2013, 2014, and 2020.
White beaked-rush	*Rhynchospora alba*	--/--/2B.2	Bogs and fens, meadows and seeps, marshes and swamps (fresh water).	195–6,695	**Present**	Suitable habitat is present in wetland habitat within BSA #1. Nearest occurrence is ~2.3 miles east of the ESL. Not observed during surveys in 2013, 2014, and 2020.
White-flowered rein orchid	*Piperia candida*	--/--/1B.2	Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest; sometimes found on serpentine soils.	100–4,300	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Common Name	*Scientific Name*	Legal Status (Federal / State / CRPR)	Habitat	Elevational Range (feet)	Habitat Present/ Absent/ CH	Potential for Occurrence and Rationale
Lichens						
angel's hair lichen	*Ramalina thrausta*	--/--/2B.1	Mesic and riparian habitats.	245–1,410	**Present**	Suitable habitat is present in riparian habitats within BSA #1. Nearest CNDDB occurrence is ~3.6 miles northeast of the ESL. Not observed during surveys in 2013, 2014, and 2020.
Methuselah's beard lichen	*Usnea longissima*	--/--/4.2	North Coast coniferous forests.	165–4,790	Absent	No suitable habitat present within BSA #1. Not observed during surveys in 2013, 2014, and 2020.

Notes:

Federal status: FE = Endangered under FESA; FT = Threatened under FESA.

State status: SE = Endangered under CESA; ST = Threatened under the CESA.; R = Rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation).

California Rare Plant Rank (CRPR):

1B = rare, threatened, or endangered in California and elsewhere

2B = threatened, or endangered in California but more common elsewhere

3 = more information is needed (Review List)

4 = limited distribution (Watch List)

CRPR Threat Ranking:

0.1 = seriously endangered in California

0.2 = fairly endangered in California

0.3 = not very endangered in California

3.2.2. Special Status Animals

Based on the queries made to USFWS, CNDDB, and CNPS databases, 53 special status animals have the potential to occur within the USGS quadrangles queried for this assessment (Table 6). Twenty-two of those species were identified as having potential suitable habitat within the project BSAs. The project BSAs either lack suitable habitat or are outside of the accepted geographic ranges for the remaining 31 species.

Table 6. Special Status Animal Species and Critical Habitat and//or EFH Potentially Occurring or Known to Occur within the Project Area

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
AMPHIBIANS					
Yellow-legged frog–Northwest/ North Coast Clade	*Rana boylii*	--/SSC	Associated with partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats, but mostly higher than 200 m elevation in areas not occupied by bullfrogs (California Herps 2022a)	**Present**	Marginal (due to tidal influence) suitable habitat is present in and adjacent to Salmon Creek. The closest CNDDB occurrence is ~1 mile southeast along the Navarro River.
Northern red-legged frog	*Rana aurora*	--/SSC	Permanent and semi-permanent freshwater aquatic habitats, such as quiet pools of streams, marshes, and ponds with extensive shrubby vegetation. Salinity affects metamorphosis and limits adult size, with the species tending to lay eggs further away from intertidal area (Goddard and Adamus 2017; California Herps 2022a)).	**Present**	Marginal habitat is present in and adjacent to Salmon Creek. The closest CNDDB occurrence is ~1.5 mile north along Dark Gulch.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Pacific tailed frog	*Ascaphus truei*	--/SSC	Occurs in northwestern California from coastal Mendocino County north to the Oregon border with the disjunct population system in the Shasta region; known elevation range of near sea level to 6,500 feet. Cool, perennial, swiftly flowing streams in conifer-dominated habitat including redwood, Douglas-fir, Klamath mixed conifer, and ponderosa pine habitats; also occur in montane hardwood conifer habitats (CDFW 2017a)	**Present**	Marginal suitable habitat is present in and adjacent to Salmon Creek. The closest reported CNDDB occurrence is located ~1.5 mile north of the BSA at Dark Gulch.
Red-bellied newt	*Taricha rivularis*	--/SSC	Associated with rapid streams and rivers with rocky substrate for breeding, typically avoiding ponds, lakes, or other standing bodies of water. Streams in proximity to redwood forests are required. In terrestrial habitat, can be found in moist habitats under woody debris, rocks, and in animal burrows (CDFW 2017b)	Absent	BSA #1 lacks suitable forested stream habitat.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Southern torrent salamander	*Rhyacotriton variegatus*	--/SSC	Found throughout northern California from near sea level to 4,000 feet (1,200 meters). Cold permanent seeps, springs, and high-gradient reaches of small, cold forested streams with gravel-dominated riffles with low sedimentation. Typically occurs in older forests sites with large trees and high canopy closure that provide suitable microclimate.	Absent	BSA #1 lacks suitable forested stream habitat.
BIRDS					
Ashy storm-petrel	*Oceanodroma homochroa*	--/SSC	Occurs year-round in offshore waters of continental slope from Cape Mendocino in Humboldt County to Baja California, Mexico. Breeds on the Farallon Island to Los Coronados. Forages over open ocean. Usually nests in crevices of talus slopes, rock walls, sea caves, cliffs, and driftwood; nests in burrows near other seabirds (CDFW 2017c)	Absent	BSA #1 lacks nesting and foraging habitat.
Bald eagle	*Haliaeetus leucocephalus*	DL/FP	Nest in treetops in forested areas adjacent to large bodies of water. Prefers mature coniferous or deciduous trees that protrude above the canopy, with good visibility.	**Present**	While suitable foraging habitat is present within BSA #1, the ESL lacks suitable nesting habitat. Observed during 2020 surveys.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Marbled murrelet	*Brachyramphus marmoratus*	FT/SE	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline. Occupy nearshore areas, estuaries, and sounds; use mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore.	Absent	BSA #1 lacks nesting and foraging habitat. The closest occurrence is ~7.8 miles north along Russian Gulch.
Northern spotted owl	*Strix occidentalis caurina*	FT/FT	A permanent resident throughout the North Coast. Nests and forages in dense old-growth or mature forests dominated by conifers with topped trees or oaks available for nesting crevices.	Absent	BSA #1 lacks nesting and foraging habitat. The closest activity center is approximately 1.5 miles northeast of the ESL along the Albion River.
Olive-sided flycatcher	*Contopus cooperi*	--/SSC	Breeds in late-successional conifer forests with open canopies. Forages from exposed perches high in the canopy, in unobstructed airspace within openings and over forest canopies. Found the entire length of the state, from sea level to 9,500 feet.	**Present**	While suitable foraging habitat is present within BSA #1, the ESL lacks suitable nesting habitat. Documented during the breeding season at Salmon Creek in the grand fir forest outside of BSA #1.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Osprey	*Pandion haliaetus*	--/WL	Rivers, lakes, reservoirs, lagoons, marshes, and swamps, with an adequate supply of fish. Nests in open surroundings, usually on snags, treetops or crotches between large branches and trunks.	**Present**	Suitable nesting and foraging habitat is present within BSA #1. Observed during surveys in 2019 and 2020 and is thought to nest within the coniferous forest habitat northeast of the BSA along the Albion River.
Peregrine falcon	*Falco peregrinus*	--/Delisted, FP	Breeds in open landscapes with cliffs for nest sites. Nests at elevations up to 12,000 feet, also along rivers and coastlines. In winter, favors an open habitat, often along mudflats, coastlines, lake edges, and mountain chains.	**Present**	Suitable foraging habitat and marginal nesting habitat (Salmon Creek Bridge) is present within BSA #1. Observed near Albion Bridge in 2020.
Purple martin	*Progne subis*	--/SSC	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges or lapsed lava tubes; distributed in (redwood) forest and woodland areas at low to intermediate elevations (CDFW 2017g)	**Present**	Suitable foraging habitat and marginal nesting habitat (Salmon Creek Bridge) is present within BSA #1. The closest reported occurrence is ~6 miles north of the ESL.
Short-tailed albatross	*Phoebastria (=Diomedea) albatrus*	FE/--	Nests on isolated, windswept, offshore islands, with restricted human access.	Absent	No suitable nesting or foraging habitat is present within BSA #1.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Tricolored blackbird	*Agelaius tricolor*	--/SSC	Associated with freshwater marsh, marsh and swamp wetland. Requires open water, protected nesting substrate, and foraging area with insect prey close to the colony. Nesting substrate typically included plant species such as *Typha* ssp. Breeding colonies are seldom smaller than 100 nests, and in the past colonies have consisted of up to 300,000 breeding birds.	Absent	No suitable nesting or foraging habitat is present within BSA #1.
Tufted puffin	*Fratercula cirrhata*	--/SSC	Occurs sparsely along the California coast from Prince Island in Del Norte County to the northern end of Big Sur. The majority of the colonies in California breed mainly on Castle Rock and a few other islands off Del Norte and Humboldt counties and on the Farallon Islands. No longer nests in southern California, and the northern California population has declined substantially since 1900. Nests on islands and, less commonly, on coastal cliffs. Requires islands free from human disturbance, with soil suitable for digging burrows, or with natural rock cavities. Perches on rocky outcroppings on islands, not necessarily near the nest. Requires large schools of pelagic fish, such as smelt or herring for food.	Absent	No suitable nesting or foraging habitat is present within BSA #1.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Yellow-breasted chat	*Icteria virens*	--/SSC (nesting)	Historically, bred throughout California lowlands and foothills; more common breeder in foothill riparian areas but more recently has been observed breeding along the Sacramento River and in the Delta; nests and forages in dense riparian thickets of willows, vines, and brush and prefers an open overstory.	**Present**	While suitable foraging habitat is present within BSA #1, the ESL lacks suitable nesting habitat (the species prefers larger expanses of suitable riparian habitat). There are no documented nesting occurrences within 10 miles of the ESL. Not observed during 2019, 2020, and 2021 surveys.
Yellow warbler	*Setophaga petechia*	--/SSC	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders, or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses.	**Present**	While suitable foraging habitat is present within BSA #1, the ESL lacks suitable nesting habitat (the species prefers larger expanses of suitable riparian habitat). There are no documented nesting occurrences within 10 miles of the ESL. Not observed during 2019, 2020, and 2021 surveys.
Western snowy plover	*Charadrius nivosus*	FT/SSC	The Pacific coast population forages on wet or dry beach-sand, among tide-cast kelp, within low foredune vegetation, dry salt ponds, and river gravel bars. Nests in shallow sand depression above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	Absent	No suitable nesting or foraging habitat is present within BSA #1. The closest CNDDB occurrence is at MacKerricher Beach. Not observed during surveys conducted by Caltrans and USFWS in 2017 or during subsequent site visits.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Yellow-billed cuckoo–Western U.S. DPS	*Coccyzus americanus occidentalis*	FT/SE	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado rivers. Requires wide, dense riparian forests/woodlands with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant; utilizes orchards adjacent to streams.	Absent	No suitable nesting or foraging habitat (large expanses of riparian habitat) is present within BSA #1.
White-tailed kite	*Elanus leucurus*	--/FP	Prefer to breed and forage in lowland foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands or cropland for foraging (CDFW 2017f)	**Present**	Suitable nesting and foraging habitat is present within BSA #1. The species is generally not reported in CNDDB but there is one record approximately 3.75 miles southeast of the ESL.
FISH					
Chinook salmon–California Coastal (CC) Evolutionarily Significant Unit (ESU)	*Oncorhynchus tshawytscha pop. 17*	FT/--	Requires large rivers or coastal streams with direct connection to the ocean for spawning. Requires cool, clear water with instream cover for spawning (Moyle 2002). Spring and fall river runs between Redwood Creek in Humboldt County and Russian River in Sonoma County.	Absent	This species has not been documented within Salmon Creek.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Coho salmon–Central California Coast (CCC) ESU	*Oncorhynchus kisutch (pop. 4)*	FE/SE	Occurs in coastal streams with water temperatures <60°F (< 15°C). Needs cool, clear water with instream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean (Moyle 2002). Spawning primarily occurs from November to January but can extend into March under drought conditions (Shapovalov and Taft 1954; CDFG 2002)	**Present** **CH Present** **EFH Present**	Suitable migration habitat is present within BSA #1 in Salmon Creek. Salmon Creek is both Critical Habitat and Essential Fish Habitat for the species.
Green sturgeon–Southern DPS	*Acipenser medirostris*	FT/--	Spawn in large river systems with well-oxygenated water, with temperatures from 46 to 57°F (8 to 14 °C) (Moyle 2002).	Absent	BSA #1 lacks suitable habitat for this species (large river systems). This species is not known to occur within Salmon Creek.
Northern coastal roach	*Hesperoleucus venustus navarroensis*	--/SSC	Freshwater obligate species which can tolerate only very low levels of salinity. Found in warm intermittent streams as well as cold, well-aerated streams. Small range in the Russian and Navarro rivers and their tributaries (CDFW 2015)	Absent	Salmon Creek does not provide suitable habitat for this species due to the tidal influence. The species has been reported on Navarro River approximately 4 miles southeast of the ESL.
Pacific lamprey	*Entosphenus tridentatus*	--/SSC	Found in coastal streams and large rivers from Japan to California, except in parts of southern California. Spawn in low gradient stream reaches in gravel, pool tailouts, and riffles (USFWS 2019).	**Present**	Suitable migration habitat is present within BSA #1. This species is known to occur within Salmon Creek.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Steelhead trout–Northern California DPS	*Oncorhynchus mykiss irideus (pop.49)*	FT/SE	Occur in coastal streams with water temperatures <60°F (<15°C). Need cool, clear water with instream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean (Moyle 2002).	**Present** **CH Present**	Suitable migration habitat is present within BSA #1 in Salmon Creek. Salmon Creek is Critical Habitat for this species.
Tidewater goby	*Eucyclogobius newberryi*	FE/SSC	Endemic to California. Found primarily in coastal lagoons, estuaries, and marshes. Found through their historic range (Smith River in Del Norte County to Agua Hedionda Lagoon in San Diego County) but resides at few locations. Absent from areas with steep coastlines and where streams do not form sandbars to create lagoons or estuaries. Generally found benthic, in brackish water in the lower stream reaches with fairly still water and low salinity (less than 12 ppt). Prefers sandy substrate for breeding and areas with sparse vegetation (USFWS 2005).	**Present** **CH Absent**	Only marginal suitable habitat may be present in BSA #1 as the sandbar at the mouth of Salmon Creek is rarely breached. The closest reported CNDDB occurrence is at MacKerricher State Park in Pudding Creek. Not documented in Salmon Creek during surveys in 1975 (Kramer pers. comm.). Recent eDNA sampling in 2019 and 2020 found no evidence of tidewater goby.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
INVERTEBRATES					
Behren's silverspot butterfly	*Speyeria zerene behrensii*	FE/--	Currently known range is limited to a few sites from Point Arena-Manchester State Park area south, Mendocino County to the Salt Point area, Sonoma County (USFWS 2011a). Coastal terrace prairie habitats with larval food sources (early blue violet [*Viola adunca*]) are required.	**Present** CH Absent	While suitable habitat is present within BSA #4, neither the adult butterfly nor its larva was detected during surveys conducted in 2014 and 2015 (Arnold 2014, 2015) or surveys conducted by Caltrans in 2019 and 2021. This species is believed to be extirpated from all sites except Point Arena.
Lotis blue butterfly	*Lycaeides argyrognomon lotis*	FE/--	Historically found from Marin to Mendocino counties. The last known population was near Mendocino, Mendocino County. Habitat is believed to include Mendocino pygmy forest, coastal peat bogs and pygmy conifer forest inland from coastal sand dunes, wet meadows, and sphagnum willow bogs. The larval host plant is believed to be harlequin lotus (coast trefoil) (*Lotus formosissimus* = *Hosackia gracilis*).	**Present** CH Absent	While suitable habitat is present within BSA #4, neither the adult butterfly nor its larva was detected during surveys conducted in 2014 and 2015 (Arnold 2014, 2015) or surveys conducted by Caltrans in 2020. A single occurrence (1983) was recorded in a Sphagnum bog near Doyle Creek ~9.0 miles north of the project area.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Western bumble bee	*Bombus occidentalis*	--/SCE	Typically nests underground in abandoned rodent burrows or other cavities, mostly in open west-southwest slopes bordered by trees. Also nests in urban parks and gardens, chaparral and shrub areas, mountain meadows.	**Present**	Suitable nesting habitat is present in grassland and coastal scrub habitats within BSA #1. Nine CNDDB occurrences in Mendocino County with the closest occurrence ~4.0 miles north of the BSA.
MAMMALS					
Blue whale	*Balaenoptera musculus*	FE/--	Coastal and pelagic environments.	Absent	No suitable aquatic habitat is present within BSA #1.
Fin whale	*Balaenoptera physalus*	FE/--	Deep, offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics.	Absent	No suitable aquatic habitat is present within BSA #1.
Guadalupe fur seal	*Arctocephalus townsendi*	FT/ST, FP	Live off southern California and the Pacific Coast of Mexico. Breed almost entirely on Guadalupe Island, Mexico. Prefer rocky insular shorelines and sheltered coves.	Absent	BSA #1 is outside the accepted geographic range of this species.
Humpback whale	*Megaptera novaeangliae*	FE/--	Open waters, this species feedings grounds are generally in cold, productive waters.	Absent	No suitable aquatic habitat is present within BSA #1.
Killer whale– Southern Resident DPS	*Orcinus orca*	FE/--	Cold, coastal waters.	Absent	No suitable aquatic habitat is present within BSA #1.
North Pacific right whale	*Eubalaena japonica*	FE/--	Open waters. Most known nursery areas are in shallow, coastal waters.	Absent	No suitable aquatic habitat is present within BSA #1.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Pacific Fisher–West Coast DPS	*Pekania pennanti*	--/SSC	Typically found in late-seral coniferous forests and deciduous-riparian habitats with dense canopy cover. Uses cavities, snags, logs, rock areas or shelters provided by slash or brush piles.	Absent	No suitable aquatic habitat is present within BSA #1.
Pacific harbor seal	*Phoca vitulina richardii*	MMPA	When not actively feeding in coastal waters, they "haul-out" to rest sites which may include rugged, rocky areas or sandy beaches along the coast.	**Present**	Marginally suitable haul-out sites are present on the beach and tidal rocks of Whitesboro Cove.
Pacific (Humboldt) marten–Coastal DPS	*Martes caurina*	FT/SE and SSC	Typically found in late successional coniferous forests.	Absent	No suitable aquatic habitat is present within BSA #1.
Pallid bat	*Antrozous pallidus*	--/SSC	Uses grasslands, shrublands, woodlands, and forests. Day roosts are in rocky outcrops, caves, crevices, mines, and occasionally tree hollows and human-made structures. Rock crevices are used for hibernation sites.	**Present**	Suitable roosting habitat is present within BSA #1. There are no occurrences within 10 miles of the BSA.
Point Arena mountain beaver	*Aplodontia rufa nigra*	FE/SSC	This species is semi-fossorial, spending much of their time in underground burrow systems, but surfacing above ground to forage on vegetation. Burrows are typically found on moist and steep north-facing slopes or gullies with well-drained, friable soil.	Absent	BSA #1 is outside the accepted geographic range of this species.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Ringtail	*Bassariscus astutus*	--/FP	Riparian forests, chaparral, scrub, oak woodlands, and rocky hillsides with crevices and tree hollows. Avoids open space and moves from tree to tree or along structures.	Absent	No suitable habitat is present within BSA #1.
Sei whale	*Balaenoptera borealis*	FE/--	Subtropical to subpolar waters on the continental shelf edge and slope worldwide. They are usually observed in deeper waters of oceanic areas far from the coastline.	Absent	No suitable aquatic habitat is present within BSA #1.
Sonoma tree vole	*Arborimus pomo*	--/SSC	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats. Predominantly eats Douglas-fir needles (CDFW 2017d)	Absent	No suitable habitat is present within BSA #1.
Sperm whale	*Physeter catodon*	FE/--	Tend to inhabit deep waters. Sometimes found around islands or in shallow shelf waters.	Absent	No suitable aquatic habitat is present within BSA #1.
Townsend's big-eared bat	*Corynorhinus townsendii*	--/SSC	Roosts in caves, mines, tunnels, buildings, and other structures in rocky areas with caves in mesic habitats. Gleans insects from foliage. Very sensitive to human disturbance.	**Present**	While BSA #1 lacks suitable maternity and hibernation habitat, roosting habitat is present under Salmon Creek Bridge. A historic occurrence (1970s) was reported near the ESL, but the species was not detected in 1987. There is one occurrence ~1.7 miles south of the BSA.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Western red bat	*Lasiurus blossevillii*	--/SSC	Roosting habitat includes forests and woodlands. Roost in trees, generally at edge habitats adjacent to streams, fields, urban areas.	**Present**	Suitable roosting habitat is present within BSA #1. No occurrences were found within 10 miles of the BSA.
REPTILES					
Green sea turtle–East Pacific DPS	*Chelonia mydas*	FT/--	Open ocean habitat. In eastern North Pacific, occurs from southern Alaska to Baja California; most commonly occur from San Diego south. Adults and juveniles found all over world, nearshores as well in bays and lagoons, on reefs, and especially in areas with seagrass beds. Forages in coastal areas. Open beaches with a sloping platform and minimal disturbance required for nesting but does not nest in Pacific northwest coast (USFWS 2018a).	Absent	No suitable nesting or foraging habitat is present within BSA #1.
Leatherback sea turtle	*Dermochelys coriacea*	FE/--	Known populations from Atlantic and Pacific oceans. Adults are pelagic and migratory. Females nest on beaches in tropical latitudes. Known foraging habitat includes oceanic and nearshore waters in temperate and boreal latitudes. Occurs off the coast of California, Oregon, and Washington.	Absent	No suitable nesting or foraging habitat is present within BSA #1.

Common Name	Scientific Name	[1]Status (Federal/ State)	Habitat Requirements	[2]Habitat Present/ Absent CH/EFH Present/ Absent	Potential for Occurrence and Rationale
Olive Ridley sea turtle	*Lepidochelys olivacea*	FT/--	Occurs worldwide in tropical and warm temperate ocean waters. Open ocean inhabitant of tropical regions of the Pacific, Atlantic, and Indian oceans. Majority of nesting occurs along continental margins and rarely on oceanic islands. Does not nest in the United States (USFWS 2018b)	Absent	No suitable nesting or foraging habitat is present within BSA #1..
Western pond turtle	*Actinemys marmorata*	--/SSC	Ponds, marshes, rivers, streams, and irrigation ditches. Prefers exposed areas for basking, with aquatic vegetation. Require soil up to 4 inches deep for egg-laying.	**Present**	Salmon Creek may provide marginal suitable aquatic dispersal habitat. There are no known occurrences within 10 miles of the BSA.

[1]Federal listing status:

FE = Endangered
FPT = Proposed Threatened
FT = Threatened
FC = Candidate
DL = Delisted

MMPA = Marine Mammal Protection Act

State listing status:

SE = Endangered
ST = Threatened
SCT = State Candidate Threatened
SCE = State Candidate Endangered
FP = CDFW Fully Protected
SSC = CDFW Species of Special Concern
SR = State Rare

[2] Habitat:

Absent = Absent: no habitat present and no further work needed.
Present = Present: the species is present.
CH = Critical Habitat: the project is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.
EFH = Essential Fish Habitat

3.2.3. Habitats and Natural Communities of Concern

Natural communities of concern are those habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status. Local, state, and federal agencies consider these habitats important, and compensation for loss of sensitive communities is often required. General descriptions of natural communities of concern found within BSA #1 are discussed below. Acreages and impacts are discussed in Section 4.1.

Waters of the U.S. and State and Riparian Habitat

Site surveys identified and mapped all jurisdictional aquatic resources within BSA #1, including any wetland or non-wetland Waters of the U.S. (WOTUS), Waters of the State, coastal wetlands, and riparian habitat. Details on delineation methodology, jurisdiction, and feature-specific data are provided in the project Aquatic Resources Delineation Report. The aquatic resources mapped are shown in Appendix F and summarized below.

Scrub-Shrub Wetlands

Several scrub–shrub wetlands were identified and mapped in BSA #1. These wetlands primarily consist of small patches of arroyo willow (*Salix lasiolepis*) or red alder adjacent to Salmon Creek and patches of cascara (*Frangula purshiana* ssp. *purshiana*) and/or arroyo willow near and adjacent to Ledford Pond. These scrub-shrub wetlands are potential WOTUS, Waters of the State, coastal wetlands, and/or riparian habitat.

Emergent Wetlands

Several emergent wetlands were identified and mapped throughout BSA #1. These wetlands can be found as small patches or extensive swards along Salmon Creek, in shallow depressional areas, on areas of groundwater discharge (e.g., slope toe and seeps), and within the meadows and pastures on the northern terrace above Salmon Creek. Most of these features are dominated by hydrophytic plants such as Pacific rush (*Juncus effusus* ssp. *pacificus*), spreading rush (*Juncus patens*), velvet grass (*Holcus lanatus*), Pacific water parsley (*Oenanthe sarmentosa*), and/or Pacific reed grass (*Calamagrostis nutkaensis*). These emergent wetlands are potential WOTUS, Waters of the State, and/or coastal wetlands.

Coastal Wetlands

Several coastal wetlands (as defined under the CCA) were identified and mapped throughout the BSA. Within the BSA, these features can be found near or adjacent to the scrub-shrub and emergent wetlands described above. However, while these features have similar characteristics to the scrub-shrub and emergent wetlands, they all lack one or two of the wetland indicators (as defined by USACE) to be considered WOTUS or Waters of the State. In addition to being potential coastal wetlands under the CCA, some of these features adjacent to Salmon Creek are also potentially riparian habitat.

Tidal Waters (Salmon Creek)

Tidal waters were identified and mapped within BSA #1. These tidal waters are located at the mouth of Salmon Creek where it meets the Pacific Ocean. Tidal waters within the BSA are both potential non-wetland WOTUS and navigable waters (as defined under Section 10 of the Rivers and Harbors Act).

Perennial Streams

Several perennial streams were identified and mapped within BSA #1. In a typical year, perennial streams flow year-round. Groundwater is the primary source of water for stream flow, as the water table is above the streambed for most of the year. Runoff from precipitation is a supplemental source of water for stream flow. Perennial streams within the BSA include the segment of Salmon Creek above tidal influence as well as both of its tributaries: Big Salmon Creek and Little Salmon Creek. All perennial streams within the BSA are potential WOTUS and Waters of the State.

Intermittent Streams

Seven intermittent streams were identified and mapped within BSA #1, mostly on the steep slopes on either side of Salmon Creek. Intermittent streams typically only flow for part of the year, generally during the wet season and drying up over the summer months. Groundwater is the primary source of water for stream flow, with precipitation providing a supplemental source. All intermittent streams within BSA #1 are potential WOTUS and Waters of the State.

Ephemeral Streams

One ephemeral stream was identified and mapped within BSA #1. Ephemeral streams flow only for short durations in response to precipitation, which is the only source of stream flow. One ephemeral stream was mapped along the lower portion of Spring Grove Road, and receives flows from a roadside swale via a culvert passing under Spring Grove Road. The one ephemeral stream within BSA #1 is a potential WOTUS and Waters of the State.

Riparian Habitat

Riparian habitat generally refers to those habitats found in and adjacent to rivers, streams, or creeks that support plant species adapted to occasional or permanent flooding and/or saturated soils. Riparian habitat was identified and mapped within BSA #1, consisting of arroyo willow or red alder dominated scrub-shrub communities adjacent to the perennial and intermittent streams referenced above. All riparian habitats within BSA #1 fall under the jurisdiction of CDFW (per 1602 LSA) and are also considered Environmentally Sensitive Habitat Areas (ESHAs) under the CCA. Additionally, most of the riparian habitats are also considered scrub-shrub wetlands and are potentially WOTUS, Waters of the State, and/or coastal wetlands.

Critical Habitat

Critical habitats are specific geographical areas designated by USFWS or NMFS for federally listed species with special management or protections. Located within a specific geographic area, these areas contain the physical or biological features that are essential to the conservation of endangered and threatened species (as determined by USFWS and/or NMFS) which may need special management or protection. This may include areas that were occupied by the specific species at the time it was listed, or those areas not occupied by the species at the time of listing but are considered essential to its conservation.

NMFS-designated critical habitat for coho salmon–Central California Coast ESU and steelhead–Northern California DPS is within BSA #1 in Salmon Creek. There is no USFWS-designated critical habitat within BSA #1.

Sensitive Natural Communities

Sensitive Natural Communities (SNCs) are natural communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status taxa or their habitat. High priority SNCs are globally (G) and state (S) ranked 1 to 3, where 1 is critically imperiled, 2 is imperiled, and 3 is vulnerable. Global and state ranks of 4 and 5 are considered apparently secure and demonstrably secure, respectively (CDFW 2022b). SNCs within BSA #1 include dune mat, grand fir forest, Idaho fescue–California oatgrass (*Festuca rubra* association), Pacific reed grass meadows, salmonberry-wax myrtle scrub (*Morella californica–Rubus* spp. association), seaside woolly–sunflower–seaside daisy–buckwheat patches, and small-fruited bulrush marsh.

Environmentally Sensitive Habitat Areas

Environmentally Sensitive Habitat Areas (ESHAs), as defined by the California Coastal Act, include "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities" (California Public Records Code [CPRC] 30107.5). ESHAs may include sensitive natural communities, wetlands, known populations of special status plants, colonies of special status animals, and/or habitat for special status animals. Potential ESHAs within BSA #1 include wetlands, sensitive natural communities, critical habitat for listed salmonids, and known populations of plant populations described above.

Essential Fish Habitat

Provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended, require consultation with NMFS for actions that may adversely affect Essential Fish Habitat (EFH) for federally managed fish and invertebrates. For the purposes of the MSA, EFH includes "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (MSA § 3(10)).

EFH for coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU is present within BSA #1 in Salmon Creek. EFH for Chinook salmon (*Oncorhynchus tshawytscha)*, Groundfish, Coastal Pelagics, and Highly Migratory Species is not present within BSA #1.

CHAPTER 4. BIOLOGICAL RESOURCES, DISCUSSION OF IMPACTS AND MITIGATION

This section evaluates potential effects of project construction activities on sensitive biological resources within the project BSAs.

4.1. Habitats and Natural Communities of Special Concern

The project BSAs support several natural communities of special concern (described in Section 3.2.3), including potentially jurisdictional wetlands, waterways, riparian habitat, SNCs, critical habitat, ESHAs, and EFH.

4.1.1. Sensitive Natural Communities

Sensitive Natural Communities occur in BSA #1 at several locations. These include vegetation alliances and associations considered sensitive by CDFW because they are of limited distribution–statewide or within a county or region and are often vulnerable to environmental effects –f projects.

Survey Results

Seven SNCs occur within BSA #1, including dune mat, grand fir forest, Idaho fescue–California oatgrass (*Festuca rubra* association), Pacific reed grass meadows, salmonberry - wax myrtle scrub (*Morella californica–Rubus* spp. association), seaside woolly–sunflower - seaside daisy–buckwheat patches, and small-fruited bulrush marsh. SNC ranks and acreages are included in Table 7.

Table 7. Sensitive Natural Communities Acreages and Impacts

Sensitive Natural Community	State Rank	Global Rank	Area within BSA #1 (acres)	Impacts (acres)	
				Permanent	Temporary
Dune Mat	S3	G3	0.139	0.00	0.0
Grand Fir Forest	S2	G4	0.708	0.003	0.0
Idaho Fescue–California oatgrass (*Festuca Rubra* Association)	S3	GNR	0.436	0.00	0.0
Pacific Reed Grass Meadows	S2	G4	0.730	0.00	0.0
Salmonberry-Wax Myrtle Scrub (*Morella californica–Rubus* spp. Association)	S3	G3	0.688	0.00	0.0
Seaside woolly-sunflower-seaside daisy-buckwheat patches	S3	G3	1.639	0.060	0.0
Small-fruited Bulrush Marsh	S2	G4	0.081	0.081	0.0
TOTALS			**4.421**	**0.144**	**0.0**

Project Impacts

Three SNCs would be impacted by project activities, including grand fir forest, seaside woolly-sunflower–seaside daisy–buckwheat patches and small-fruited bulrush marsh. Permanent impacts to 0.003 acre of grand fir forest and 0.060 acre of seaside woolly–sunflower–seaside daisy–buckwheat patches may occur due to proposed widening of Spring Grove Road (required for vehicle access). Permanent impacts to 0.081 acre of small-fruited bulrush would occur when lead contaminated soil is removed from areas from within the project ESL. While proposed restoration activities aim to restore small-fruited bulrush areas to their original condition following the removal of contaminated soils, it is speculated that the restored areas would not be functionally equivalent to the impacted community. Therefore, off-site mitigation for all 3 SNCs would be pursued prior to the beginning of project construction.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to SNCs, both during and after construction. Potential impacts that could occur due to invasive nonnative plants colonizing the disturbed area would be minimized through revegetation efforts and standard measures to control/reduce the spread of invasive nonnative species and the implementation of the project's Revegetation Plan. Actual construction-related impacts would be avoided or minimized to the extent possible during final project design and during construction.

Compensatory Mitigation

Due to proposed permanent impacts to SNCs, off-site compensatory mitigation would be pursued at an approved mitigation bank or property prior to project construction. The final acreage of impact and compensation would be determined as part of the permitting phase of the proposed project. Caltrans would also implement the conditions and requirements of federal and state permits that would be obtained for the proposed project as part of the permitting process with the USACE, CCC, CDFW, NCRWQCB and County of Mendocino.

Cumulative Impacts

Several past, current, and future Caltrans projects and other general development projects could affect these SNCs in the region. Construction of the proposed project would not add to the cumulative loss of this SNC because the effects are very small. Therefore, given the minimal scope and scale of the potential effects, and with implementation of avoidance and minimization measures and the project Revegetation Plan, the proposed project would not contribute to cumulatively considerable impacts on these SNCs in the context of other projects completed, underway, or planned in the vicinity of the proposed project.

4.1.2. Wetlands and Waters of the U.S. and State and Riparian Habitat

Wetlands

Survey Results

Several jurisdictional wetlands were documented within BSA #1, including CWA 404 jurisdictional emergent wetlands and scrub-shrub wetlands (as defined by the USACE) and CCA jurisdictional coastal emergent wetlands and coastal scrub-shrub wetlands (as defined by the CCA). A summary of wetlands documented within BSA #1, including acreages and potential jurisdiction, is provided in Table 8. These wetlands are also shown in Appendix F. Wetland delineation methods, results, potential jurisdiction, and delineation maps are described in detail in the project Aquatic Resource Delineation Report.

Table 8. Anticipated Impacts to Wetlands

Feature Type	Area within BSA #1 (acres)	Jurisdiction	Impacts (acres)	
			Temporary	Permanent
Emergent wetland	2.046	USACE RWQCB CCC	0.012	0.081
Scrub-shrub wetlands	0.841	USACE RWQCB CCC	0.000	0.150
Waters of the U.S. State/Wetlands			**0.012**	**0.231**
Coastal emergent wetlands	1.301	CCC	0.000	0.640
Coastal scrub-shrub wetlands	2.085	CCC	0.560	0.314
Waters of the U.S./State Coastal Wetlands			**0.560**	**0.954**
TOTAL			**0.572**	**1.185**

Project Impacts

The project is anticipated to permanently impact approximately 1.185 acres of jurisdictional wetlands as a result of lead contaminated soil removal and access road widening activities. The project is also anticipated to temporarily impact approximately 0.572 acre of jurisdictional wetlands as a result of lead contaminated soil removal (on slopes). Anticipated impact acreages to jurisdictional wetlands are shown above in Table 8. Exact impact acreages presented here are preliminary until project plans are finalized as part of the permitting phase of the proposed project.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to jurisdictional wetlands, both during and after construction. Potential impacts that could occur due to invasive nonnative plants colonizing the disturbed area would be minimized through revegetation efforts and standard measures to control/reduce the spread of invasive nonnative species and the implementation of the project's Revegetation Plan. Wetlands within staging areas would also be demarcated with ESA fencing to avoid impacts during construction. Actual construction-related impacts would be avoided or minimized to the extent possible during final project design and during construction.

Compensatory Mitigation

Impacts to wetlands would be compensated to the greatest extent practicable via onsite restoration. However, for impacts to wetlands that cannot be compensated for onsite, off-site compensatory mitigation would be pursued at an approved mitigation bank or property prior to project implementation. Caltrans would also implement the conditions and requirements of federal and state permits as part of the permitting process with the USACE, CCC, CDFW, County of Mendocino, and North Coast RWCQB.

Cumulative Impacts

Cumulative impacts to wetlands would result from construction of other general development projects in Mendocino County, including bridge replacement and/or retrofit projects at Salmon Creek and Albion River. Construction of the proposed project would add to the cumulative loss of wetlands and other waters. However, with the small amount of wetland/waters impacts anticipated for those projects, and with implementation of the measures prescribed for minimizing impacts and compensating for remaining impacts, the

proposed project's incremental contribution to cumulative impacts to wetlands and other waters would not be cumulatively considerable.

Non-Wetland Waters

Survey Results

Eleven non-wetland WOTUS/Waters of the State features were documented within the project BSA #1, including Salmon Creek (perennial stream and tidal waters), Little Salmon Creek, 7 intermittent streams, 1 ephemeral stream, and a roadside ditch. Delineation methods, results, potential jurisdiction, and delineation maps for all non-wetland WOTUS/Waters of the State are described in detail in the project Aquatic Resources Delineation Report. A summary of WOTUS and Waters of the State documented within BSA #1, including acreages and potential jurisdiction, is provided in Table 9. These features are also mapped in Appendix H.

Table 9. Anticipated Impacts to Non-Wetland Waters

Feature Type	Area within BSA #1 (acres)	Potential Jurisdiction	Temporary Impact (acres)
Tidal Waters	0.741	USACE, RWQCB, CCC, CDFW	0.00
Ephemeral Streams	0.002	USACE, RWQCB, CCC, CDFW	0.00
Intermittent Streams	0.033	USACE, RWQCB, CCC, CDFW	<.001
Perennial Streams	0.424	USACE, RWQCB, CCC, CDFW	0.00
Ditches	0.020	USACE, RWQCB, CCC	0.013
TOTAL	**1.220**		**0.014**

Project Impacts

The proposed project would temporarily impact approximately 0.014 acre of non-wetland Waters of the U..S./Waters of the State. These impacts would occur to a roadside ditch and an intermittent stream during access road widening activities; however, any impacts to these features would be restored during the restoration/revegetation phase of the project. No impacts to ephemeral streams, tidal waters, or perennial stream portions of Salmon Creek or Little Salmon Creek within BSA #1 are anticipated as work is not proposed to occur within these waters. Anticipated impact acreages to Waters of the U.S./Waters of the State are shown above in Table 9. Exact impact acreages presented here are preliminary until project plans are finalized as part of the permitting phase of the proposed project.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to non-wetland WOTUS/Waters of the State, both during and after construction. Actual construction-related impacts would be further minimized to the extent possible during final project design and during construction.

Compensatory Mitigation

No compensatory mitigation is proposed for impacts to non-wetland WOTUS/Waters of the State as any potential impacts to these features would be temporary. Temporary impacts to these features during project construction would be restored onsite once waste abatement activities are complete. The final acreage of impacts would be determined as part of the permitting phase of the proposed project. Caltrans would also implement the conditions of federal and state permits that would be obtained for the proposed project as part of the permitting process with the USACE, CCC, CDFW, NCRWQCB, and County of Mendocino.

Cumulative Impacts

Cumulative impacts to non-wetland WOTUS/Waters of the State would likely result from construction of other general development projects in Mendocino County, including bridge replacement and/or retrofit projects at Salmon Creek and Albion River. Construction of the proposed project would add to the cumulative impact to WOTUS and Waters of the State. However, with the small amount of wetland/waters impacts anticipated for those projects and with implementation of the measures prescribed for minimizing impacts and compensating for remaining impacts, the proposed project's incremental contribution to cumulative impacts to wetlands and other waters would not be cumulatively considerable.

Riparian Habitat

Survey Results

Riparian habitat, which includes red alder forest and some arroyo willow thicket communities adjacent to Salmon Creek, was documented in several locations within BSA #1. This does not include some arroyo willow thickets that are mapped as wetlands, but are not considered riparian habitat as they are not associated with a watercourse (see previous Wetland section). A summary of riparian habitat documented within BSA #1, including acreages and potential jurisdiction, is provided in Table 10. These features are also mapped in Appendix H.

Project Impacts

The proposed project would result in approximately 0.839 acre of temporary impacts to riparian habitat due to lead contaminated soil removal and access road widening activities. Permanent impacts are not expected. Anticipated impact acreages to riparian habitats are shown in Table 10. Exact impact acreages presented here are preliminary until project plans are finalized and construction has been completed.

Table 10. Anticipated Impacts to Riparian Habitat

Riparian Habitat Type	Jurisdiction	Acreage within BSA #1	Temporary Impacts (acres)
Arroyo willow thickets	CCC and CDFW	1.80	0.821
Red alder forest	CCC and CDFW	0.56	0.018
TOTAL		**2.36**	**0.839**

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to riparian habitats, both during and after construction. Actual construction-related impacts would be further minimized to the extent possible during final project design and construction.

Compensatory Mitigation

Impacts to riparian habitat would be offset to the greatest extent practicable via onsite restoration. However, for impacts to riparian habitat that cannot be compensated for onsite, off-site compensatory mitigation would be pursued at an approved mitigation bank or property prior to project implementation. Caltrans would also implement the conditions and requirements of federal and state permits as part of the permitting process with the USACE, CCC, CDFW, County of Mendocino, and North Coast RWCQB.

Cumulative Impacts

Cumulative impacts to riparian habitat would likely result from construction of other general development projects in Mendocino County, including bridge replacement or retrofit projects at Salmon Creek and Albion River. Construction of the proposed project would add to the cumulative impact to riparian habitat. However, with the small amount of riparian habitat impacts anticipated for those projects and with implementation of the measures prescribed for minimizing impacts and compensating for remaining impacts, the proposed project's incremental contribution to cumulative impacts to riparian habitat would not be cumulatively considerable.

4.1.3. Critical Habitat

Survey Results

There is NMFS-designated critical habitat for coho salmon–Central California Coast ESU and steelhead–Northern California DPS within BSA #1 in Salmon Creek. There is no USFWS-designated critical habitat within BSA #1.

Project Impacts

Since project activities are not occurring within critical habitat for coho salmon–Central California Coast ESU and steelhead–Northern California DPS, critical habitat would not be impacted by project activities. As such, the project would have ***no effect*** to critical habitat for either species.

Avoidance and Minimization Efforts

As critical habitat would not be impacted by the proposed work, no species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

As critical habitat would not be impacted by the proposed work, no compensatory mitigation would be required.

Cumulative Impacts

As critical habitat would not be impacted by the proposed work, no cumulative impacts are expected.

4.1.4. Essential Fish Habitat

Survey Results

Essential Fish Habitat (EFH) for coho salmon–Central California Coast ESU is present within BSA #1 in Salmon Creek. EFH for Chinook salmon, Groundfish, Coastal Pelagics, and Highly Migratory Species is not present within BSA #1.

Project Impacts

As project activities are not occurring within EFH for coho salmon, there would be no impacts to EFH.

Avoidance and Minimization Efforts

As EFH would not be impacted by the proposed work, no species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

As EFH would not be impacted by the proposed work, no compensatory mitigation is proposed.

Cumulative Impacts

As EFH would not be impacted by the proposed work, no cumulative impacts are proposed.

4.2. Discussion of Special Status Plant Species

Seven special status plant species were documented within BSA #1 during botanical surveys conducted in 2013, 2014, 2020, and 2021, including fringed cornlily (*Veratrum fimbriatum*), Harlequin lotus (*Hosackia gracilis*), Oregon coast paintbrush (*Castilleja litoralis*), Pacific gilia (*Gilia capitata* ssp. *pacifica*), Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*), swamp harebell (*Campanula californica*), and leafy-stemmed mitrewort (*Mitellastra caulescens*). A discussion of these special status species, potential project impacts, and avoidance and minimization measures are provided below.

The project BSA #1 also contains suitable habitat for an additional 30 special status plant species described in Table 5 which were not identified during any of the four seasons of botanical surveys (2013, 2014, 2020, 2021). As these species do not have a federal or state listing, are not thought to occur within the BSA, and therefore would not be impacted by the proposed project, no further discussion is included in this assessment.

4.2.1. Federal and State Listed Plant Species

The USFWS, CNDDB, and CNPS databases list six federal and/or state listed plant species that could occur near the project along the Mendocino Coast. These species include:

- Burke's goldfields (*Lasthenia burkei)*—federal endangered
- Contra Costa goldfields (*Lasthenia conjugens)*—federal endangered
- Howell's spineflower (*Chorizanthe howellii)*—federally endangered and state threatened
- Humboldt County milk vetch (*Astragalus agnicidus)*—state endangered
- Monterey clover (*Trifolium trichocalyx)*—federal and state endangered
- Showy Indian clover (*Trifolium amoenum)*—federal endangered

However, there is only suitable habitat present for Howell's spineflower within BSA #1.

Survey Results

None of the federal and/or state listed plant species listed above were detected within the BSA #1 during botanical surveys conducted in 2013, 2014, 2020, and 2021.

Project Impacts

Given that none of the federal and/or state listed plant species listed above were documented within the BSA#1 (Coastal BSA), the proposed project would have no impacts to these species; therefore, Caltrans has determined the proposed project would have ***no effect*** to any of these species.

Avoidance and Minimization Efforts

As no impacts are anticipated to federal or state listed plant species, no species-specific avoidance and minimization measures would be implemented.

Compensatory Mitigation

As no impacts are anticipated to federal or state listed plant species, no compensatory mitigation would be required.

Cumulative Impacts

As no impacts are anticipated to federal or state listed plant species, cumulative impacts are not expected.

4.2.2. Fringed Cornlily

Fringed cornlily (*Veratrum fimbriatum*) has a CRPR of 4.3, an S3 state ranking, and a G3 global ranking.

Survey Results

Two populations (~50 plants) of fringed cornlily were documented within BSA #1, one within the proposed staging area on Hughes parcel (APN 123-330-10) east of Spring Grove Road and one on the east side of SR 1 at the intersection of Albion Ridge Road. These populations are shown in Appendix J.

Project Impacts

The population of fringed cornlily within the proposed staging area on the proposed staging parcel would not be impacted during project activities. The Standard Measures and Best Management Practices outlined in Section 1.3 (i.e., placement of high visibility ESA fencing) would ensure no project-related impacts occur to this species.

Avoidance and Minimization Efforts

As project-related impacts to fringed cornlily are not anticipated, no species-specific avoidance and minimization efforts are proposed. If impacts to fringed cornlily are unable to be avoided during construction, measures provided in the Revegetation Plan, such as seed collection and plant establishment, would ensure impacts are negligible.

Compensatory Mitigation

As project-related impacts to fringed cornlily are not anticipated, no compensatory mitigation is proposed.

Cumulative Impacts

As project-related impacts are not anticipated to occur to fringed cornlily, cumulative impacts are not expected.

4.2.3. Harlequin Lotus

Harlequin lotus (*Hosackia gracilis*) has a CRPR of 4.2, an S3 state ranking, and a G3 global ranking. Harlequin lotus is also known to be the larval host plant for the lotis blue butterfly, a federal endangered species (discussed in Section 4.3.5).

Survey Results

Multiple populations of harlequin lotus were documented within BSA #4 (Butterflies), with the largest occurrence of approximately 3,000 plants located in the eastern portion of BSA #4 within the common velvet grass–sweet vernal grass habitat east of SR 1. A population of approximately 130 individuals was documented west of SR 1 on either side of Spring Grove Road and the Ledford House restaurant. Two small populations were also documented north of Spring Grove Road and west of SR 1. These populations are shown in Appendix J.

Project Impacts

The project may result in impacts to harlequin lotus within the four proposed staging areas east of Spring Grove Road and north of Salmon Creek. Impacts would result from vehicle/stockpile staging and temporary ground disturbance from grading. The Standard Measures and Best Management Practices outlined in Section 1.3 (such as the placement of high visibility ESA fencing) are anticipated to minimize project-related impacts to the species.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to harlequin lotus, both during and after construction. Known populations within staging areas would be demarcated with ESA fencing to avoid impacts during construction. Actual construction-related impacts would be further minimized to the extent possible during final project design and during construction.

If impacts to harlequin lotus are unable to be avoided during construction, measures provided in the Revegetation Plan, such as seed collection and plant establishment, would ensure impacts are negligible.

Compensatory Mitigation

As project-related impacts to harlequin lotus would be minor and temporary in nature and would likely be avoided entirely, and due to the relative abundance of this species in the general vicinity of the project, no compensatory mitigation is proposed.

Cumulative Impacts

As project-related impacts to harlequin lotus would be minor and temporary in nature and would most likely be avoided entirely, cumulative impacts are not anticipated.

4.2.4. Leafy-stemmed Mitrewort

Leafy-stemmed mitrewort (*Mitellastra caulescens*) has a CRPR of 4.2, an S4 state ranking, and a G5 global ranking.

Survey Results

One population (approximately 15 plants) of leafy-stemmed mitrewort was documented within BSA #1 within the red alder forest habitat adjacent to Salmon Creek and Spring Grove Road. This population is shown in Appendix J.

Project Impacts

As no proposed work is occurring near the leafy-stemmed mitrewort population, no impacts are anticipated. Additionally, the Standard Measures and Best Management Practices outlined in Section 1.3, such as the placement of high visibility ESA fencing, would help to further minimize any project-related impacts.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to leafy-stemmed mitrewort, both during and after construction. The known population would be demarcated with ESA fencing to avoid impacts during construction.

Compensatory Mitigation

As project-related impacts to leafy-stemmed mitrewort are not anticipated, no compensatory mitigation is proposed.

Cumulative Impacts

As project-related impacts to leafy-stemmed mitrewort are not anticipated, cumulative impacts are not expected.

4.2.5. Oregon Coast Paintbrush

Oregon coast paintbrush (*Castilleja litoralis*) has a CRPR of 2B.2, an S3 state ranking, and a G3 global ranking.

Survey Results

One small population (~25 individuals) of Oregon coast paintbrush was documented within BSA #1 in the seaside woolly-sunflower–seaside daisy–buckwheat patches adjacent to Spring Grove Road. These individuals were generally found high up the hillside at an elevation of approximately 85 feet along the more exposed rock outcrops. These populations are shown in Appendix J.

Project Impacts

Project-related impacts to a small portion of the Oregon coast paintbrush population may occur due to the road widening activities proposed along Spring Grove Road. However, the Standard Measures and Best Management Practices outlined in Section 1.3, would minimize impacts to the majority of this population at this location.

Avoidance and Minimization Efforts

As project-related impacts to Oregon coast paintbrush are anticipated to be minor with incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3, no additional species-specific avoidance and minimization efforts are currently proposed. However, if impacts to this species during construction are unavoidable, the project Revegetation Plan would incorporate measures, such as seed collection and plant establishment, to ensure impacts are negligible.

Compensatory Mitigation

As project-related impacts to Oregon coast paintbrush would be minor and temporary in nature and most likely avoided entirely, and due to the relative abundance of this species in the general vicinity of the project, no compensatory mitigation is proposed.

Cumulative Impacts

As project-related impacts to Oregon coast paintbrush would be minor and temporary in nature and would most likely be avoided entirely, cumulative impacts are not anticipated.

4.2.6. Pacific Gilia

Pacific gilia (*Gilia capitata* ssp. *pacifica*) has a CRPR of 1B.2, an S2 state ranking, and a G5T3 global ranking.

Survey Results

A large population of Pacific gilia (~2,500 plants) was documented within BSA #1 on the north side of Spring Grove Road as it descends towards Salmon Creek and a second smaller population (~100 plants) was documented on the bluff cliffs below Ledford House restaurant. These populations are shown in Appendix J.

Project Impacts

Project-related impacts to both Pacific gilia populations may occur due to the road widening activities proposed along Spring Grove Road. The population of Pacific gilia on the bluff below Ledford House restaurant would not be affected by the project.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to Pacific gilia, both during and after construction. Known populations would be demarcated with ESA fencing to avoid impacts during construction to the greatest extent practicable. Actual construction-related impacts would be further minimized to the extent possible during final project design and during construction.

If impacts to Pacific gilia are unable to be avoided during construction, measures provided in the Revegetation Plan, such as seed collection and plant establishment, would ensure impacts are negligible.

Compensatory Mitigation

Due to the relative abundance of this species in the general vicinity of the project, no compensatory mitigation is proposed.

Cumulative Impacts

Due to the relative abundance of this species in the general vicinity of the project, significant cumulative impacts are not anticipated.

4.2.7. Point Reyes Checkerbloom

Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*) has a CRPR of 1B.2, an S2 state ranking, and a G5T2 global ranking.

Survey Results

One population of Point Reyes checkerbloom was documented in the common velvet grass–sweet vernal grass habitats within the northern portions of BSA #1 east of SR 1. This population is shown in Appendix G.

Project Impacts

As no proposed work is occurring near the Point Reyes checkerbloom population, no impacts are anticipated. Additionally, the Standard Measures and Best Management Practices outlined in Section 1.3, such as the placement of high visibility ESA fencing, would help to further minimize any project-related impacts.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to Point Reyes checkerbloom, both during and after construction. The known population would be demarcated with ESA fencing to avoid impacts during construction.

Compensatory Mitigation

As project-related impacts to Point Reyes checkerbloom are not anticipated, no compensatory mitigation is proposed.

Cumulative Impacts

As project-related impacts to Point Reyes checkerbloom are not anticipated, cumulative impacts are not expected.

4.2.8. Swamp Harebell

Swamp Harebell (*Campanula californica*) has a CRPR of 1B.2, an S3 state ranking, and a G3 global ranking.

Survey Results

One small population (~40 plants) of swamp harebell was documented within the proposed staging area on the Hughes parcel (APN 123-330-10) east of Spring Grove Road. This population is shown in Appendix J.

Project Impacts

With implementation of the Standard Measures and Best Management Practices outlined in Section 1.3 (e.g., placement of high visibility ESA fencing), project-related impacts to swamp harebell are not anticipated.

Avoidance and Minimization Efforts

As project-related impacts to swamp harebell are not anticipated, no species-specific avoidance and minimization efforts are proposed. The Standard Measures and Best Management Practices described in Section 1.3 would minimize project impacts to swamp harebell, both during and after construction. Known populations would be demarcated with ESA fencing to avoid impacts during construction to the greatest extent practicable. Actual

construction-related impacts would be further minimized to the extent possible during final project design and during construction.

Compensatory Mitigation

As project-related impacts to swamp harebell are not anticipated, no compensatory mitigation is proposed.

Cumulative Impacts

Given the project is not anticipated to impact swamp harebell, cumulative impacts are not expected.

4.3. Discussion of Special Status Animal Species

A discussion of those special status animal species that could be impacted by the project, potential impacts, and avoidance and minimization measures is provided below. Species with similar habitat requirements, behaviors, and/or life histories are combined in one assessment. BSA #1 lacks suitable habitat for 31 species described in Table 6. As these species are not expected to occur within BSA #1, and therefore would not be impacted by the proposed project, no further discussion is included in this assessment.

4.3.1. AMPHIBIANS AND REPTILES

Foothill Yellow-legged Frog, Northern Red-legged Frog, Pacific Tailed Frog, and Western Pond Turtle

Foothill yellow-legged frog (*Rana boylii*)–Northwest/North Coast Clade, northern red-legged frog (*Rana aurora*), Pacific tailed frog (*Ascaphus truei*), and western pond turtle (*Emys marmorata*) are CDFW Species of Special Concern (SSC) that could occur in BSA #1.

Foothill yellow-legged frogs are characteristically found very close to water in association with perennial streams and ephemeral creeks that retain perennial pools through the end of summer. This species is associated with partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. During cold weather, individuals seek cover under rocks in the streams or on shore within 6 feet of water. This species is rarely encountered far from permanent water. Eggs are attached to gravel or rocks in moving water near stream margins. Mating and egg-laying occurs exclusively in streams and rivers (not in ponds or lakes).

The northern red-legged frog is a medium to large sized frog that is found in humid forests, woodlands, grasslands, and stream sides with dense riparian cover. It is most common in lowlands or foothills and is frequently found in woods adjacent to streams, but can be wide-ranging and highly terrestrial in damp woods and meadows during the non-breeding season. It requires permanent water sources such as ponds and lakes for breeding.

Pacific tailed frogs typically occur in mature or late-successional conifer-dominated habitats, including coast redwood and Douglas-fir forests. They can be found in cool, perennial streams with steep banks and dense vegetation. Tailed frogs are usually found in streams with large stones, cobbles, and stable boulders, which can be used for shelter from rapid current. Quieter side pools are also needed so eggs are not washed away.

Western pond turtles prefer creeks and ponds with quiet water, as well as streams with boulders or fallen trees that provide cover. The species is often associated with areas that provide basking habitat such as aquatic vegetation and/or logs.

Survey Results

Special status amphibians and reptile surveys were not conducted within the project BSA #1. However, it is presumed that the portions of Salmon Creek that are not tidally influenced may provide suitable aquatic breeding habitat for foothill yellow-legged frog, northern-red legged frog, Pacific tailed frog, and western pond turtles. These species may also utilize other habitats within the BSA #1 as a dispersal corridor to and from more suitable aquatic habitat located outside the BSA and upstream of the Salmon Creek Bridge.

Project Impacts

Project-related activities could directly and indirectly affect individuals if present within the ESL. Potential direct effects include injury and mortality of individuals due to crushing from construction equipment and vehicle traffic and indirect impairment of the species during removal and disturbance of vegetation. Temporary reduction of the amount of available foraging habitat and reduced cover for amphibians and reptiles may expose individuals to predation; however, better quality habitat is available upstream and outside of the BSA, where individuals could disperse. Aquatic habitat may also be affected if construction activities result in degradation of the creek and wetland habitat or impact water quality. These potential impacts are anticipated to be minimal and likely avoided entirely with the implementation of the Standard Measures and Best Management Practices outlined in Section 1.3.

Additionally, the preparation of an Aquatic Species Relocation Plan (Measure AS-4), would minimize impacts to special status amphibians and reptiles. Given this, substantial impacts to amphibians and reptiles are not anticipated.

Avoidance and Minimization Efforts

As special status amphibians and reptiles would not be substantially impacted by the proposed work, no species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

With the implementation of standard and species-specific avoidance and minimization measures identified in Section 1.3 would minimize or avoid impacts to special status amphibians and reptiles, no compensatory mitigation is proposed.

Cumulative Impacts

As there would be no substantial potential impacts with this project, the proposed work would have no cumulative impact on special status amphibians and reptiles.

4.3.2. BIRDS

Western Snowy Plover

The Pacific coastal population of western snowy plover (*Charadrius nivosus nivosus*) is federally listed as threatened (58 FR 12864) and is a CDFW SSC. The Pacific Coast population (formerly *C. alexandrinus nivosus*) is defined as those individuals that nest within 50 miles of the Pacific Ocean from southern Washington to southern Baja California, Mexico (58 FR 12864). Sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries above the high tide line are the main coastal habitats for nesting (Stenzel et al., 1981; Wilson 1980). Nests typically occur in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent (Stenzel et al., 1981; Brindock and Colwell, 2011; Herman and Cowell, 2014).

Survey Results

While western snowy plover was not included in special status species queries for the proposed project, it was determined that Whitesboro Cove had marginal suitable habitat for the species and further analysis was deemed necessary.

Western snowy plover was not documented during the 2013, 2014, 2020, or 2021 surveys. Additionally, a field review was conducted on October 21, 2020 by USFWS Fish and Wildlife Biologist Greg Schmidt and Caltrans biologists. During the field review, a habitat assessment was conducted to determine potential for nesting Western snowy plovers occupying sites within beach habitat in the project area. Due to beach morphology, which is described as narrow, lacking wide and relatively flat non-tidal areas for nesting, it was determined beach habitat within the project area was not suitable for Western snowy plover nesting. Additionally, the closest known CNDDB occurrence and critical habitat was located 19 miles north of the project area at MacKerricher State Park. Western snowy plover is not expected to occur within the project BSA #1.

Project Impacts

Since western snowy plover is not expected to occur, the proposed project would not impact western snowy plover, their nests, or critical habitat. As such, the project would have ***no effect*** on western snowy plovers or their critical habitat.

Avoidance and Minimization Efforts

As western snowy plover would not be impacted by the proposed work, no species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

Since western snowy plovers would not be impacted by the proposed work, no compensatory mitigation would be required.

Cumulative Impacts

Since western snowy plovers would not be impacted by the proposed work, no cumulative impacts are expected.

Raptors

Several raptor species may forage and nest in and around BSA #1, including bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), peregrine falcon (*Falco peregrinus*), and white-tailed kite (*Elanus leucurus*). These species are protected by the Migratory Bird Treaty Act (MBTA) and bald eagle, peregrine falcon, and white-tailed kite are CDFW Fully Protected. Additionally, osprey are treated as "taxa to watch" by CDFW due to their former inclusion on special concern lists.

Breeding habitat requirements vary between species; bald eagle and osprey nest in tall mature trees near water and forage in open water habitats; peregrine falcon typically nest on cliff faces, but are also known to nest on human structures (e.g., bridges); white-tailed kite nest in the upper canopy of tall trees or structures, often within dense forests, and forage in more open grassland and shrub habitats.

Survey Results

No focused surveys have been conducted for raptors; however, sightings of peregrine falcon, osprey, and bald eagle have been reported in the area. Bald eagles typically nest in tall, dense trees, and are not thought to nest within the project area. They may forage along Salmon Creek and outside of the project area in the Pacific Ocean. Osprey have been observed breeding approximately 1.5 miles northeast of the project area within coniferous forest habitat and frequently forage within and around the project area. CNDDB reports nests detected in Big River Estuary approximately 4 miles north of the project area. Although unlikely to breed in the coastal scrub, grassland, and riparian habitats within BSA #1, nesting cannot entirely be ruled out.

Peregrine falcon have been observed flying both north and south of the Salmon Creek Bridge, and there is suitable nesting habitat along the cliffs of the Pacific Ocean outside of the project area. While unlikely, the Salmon Creek Bridge could provide suitable platforms for nest placement as well. No peregrine falcon nests were found during 2013, 2014, 2019, 2020, and 2021 surveys. White-tailed kite prefer to nest in large trees at the edge of forests. Sufficient large tree habitat is only present in the eastern portion of the project area and not within any areas slated for construction. Neither species was observed nesting or foraging within the project area during 2013, 2014, 2019, 2020, and 2021 surveys; however, both species would be expected to forage in the grassland habitat surrounding the project.

Project Impacts

No impacts are anticipated to raptor nesting habitat from the proposed project. Construction-related activities within the ESL could result in the direct mortality of adults, young, and eggs; however, the likelihood of raptors nesting within the immediate vicinity of the project area is low. The low likelihood of impacts is a result of existing noise levels that SR 1 experiences, the regular visual disturbance of traffic, and the availability of higher quality habitat associated with the cliffs along the Pacific Ocean and conifer habitat outside BSA #1 or in close proximity of SR 1.

Due to the minimal amount of foraging habitat that would be removed, the temporary nature of the project, and with implementation of the Standard Measures and Best Management Practices outlined in Section 1.3, impacts to nesting raptors are not anticipated.

Avoidance and Minimization Efforts

As raptors and their nests would not be impacted by the proposed work, no species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

As no impacts are anticipated to raptors or their nests, no compensatory mitigation would be required.

Cumulative Impacts

With implementation of measures to avoid and minimize potential impacts to raptors and the restoration of temporarily affected habitat to pre-project conditions upon completion of construction, the proposed project's effect on raptors would not be cumulatively considerable.

Other Migratory and Non-migratory Bird Species

The occupied nests and eggs of all birds are protected by state law (CFGC § 3503) and those of migratory birds are further protected by federal and state laws, including the MBTA and CFGC Section 3503.5. USFWS is responsible for overseeing compliance with the MBTA, and CDFW is responsible for overseeing compliance with the CFGC and making recommendations about nesting birds.

Survey Results

Vegetation within BSA #1 is dense and diverse and suitable habitat for a variety of migratory and non-migratory nesting bird species. Birds observed by Caltrans biologists in 2012 and 2013 are shown in Appendix G. In addition, suitable habitat is present within BSA #1 for CDFW special status bird species including olive-sided flycatcher (*Contopus cooperi*), purple martin (*Progne subis*), yellow-breasted chat (*Icteria virens*) and yellow warbler (*Setophaga petechia*). Focused breeding bird surveys were conducted in 2020 and 2021 by Caltrans biologists to determine common species present within the project vicinity and to document any nesting activity. Some species known to nest within BSA #1 include cliff swallow (*Petrochelidon pyrrhonota)*, house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), orange-crowned warbler (*vernivora cleata*), song sparrow (*Melospiza melodia*), Steller's jay (*Cyanocitta stelleri)*, and white-crowned sparrow (*Zonotrichia leucophrys*). Many migratory and non-migratory bird species are expected to occur in the vicinity based on local observations (eBird 2022); however, the proximity of BSA #1 to traffic on SR 1 reduces the habitat suitability and likelihood that most species of migratory and non-migratory birds would use the vicinity surrounding Salmon Creek for nesting.

Project Impacts

The project has the potential to affect nesting migratory birds either through direct injury or mortality during ground-disturbing activities and vegetation removal or by disrupting normal behaviors, including nesting. While a substantial amount of vegetation would be removed as part of the sandblast waste abatement, the temporary nature of the project, and implementation of the Standard Measures and Best Management Practices outlined in Section 1.3, impacts to nesting birds are not anticipated.

Avoidance and Minimization Efforts

As impacts to migratory and non-migratory birds would be minimized and avoided with implementation of the Standard Measures and Best Management Practices outlined in section 1.3, no avoidance and minimization measures are proposed.

Compensatory Mitigation

As migratory and non-migratory birds and their nests would not be impacted by the proposed work, no compensatory mitigation would be required.

Cumulative Impacts

As migratory and non-migratory birds and their nests would not be impacted by the proposed work, no cumulative impacts are expected.

4.3.3. FISH

Coho Salmon–Central California Coast ESU

Coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU was federally listed as endangered on June 28, 2005, which was a change from its previously listed status of threatened due to severe population declines between 1996 and 2004. Coho salmon are also listed as state endangered. A recovery plan was published for coho salmon on September 12, 2012 (NMFS 2012). On May 5, 1999, critical habitat was designated for coho salmon–Central California Coast ESU, which encompasses all accessible reaches of all rivers, including estuarine areas and tributaries, between Punta Gorda and the San Lorenzo River in California.

Coho salmon in California typically return to their natal streams to spawn after two years in the ocean, although some return to spawn after the first year; these are referred to as grilse or jacks (Laufle et al., 1986; CDFG 2002). Adult migration timing varies between tributaries, but generally begins after stream flows increase in fall and early winter and generally occurs from September through January (CDFG 2002). In small coastal streams, flows must be high enough to breach any sandbars that have formed so migration typically begins mid-November through mid-January (Baker and Reynolds, 1986; CDFG 2002).

Coho salmon spawn in smaller streams than Chinook salmon and spawning primarily occurs from November to January, however can extend into March under drought conditions (Shapovalov and Taft, 1954; CDFG 2002). Fry emerge from gravel between March and July, with peak emergence occurring from March to May, depending on when the eggs were fertilized and the water temperature during development (Shapovalov and Taft, 1954; CDFG 2002). Similar to other salmonids, fry seek out shallow water at stream margins whereas larger fish move progressively into deeper water. Juvenile rearing areas include low-gradient coastal streams, wetlands, lakes, sloughs, side channels, estuaries, and low-gradient tributaries to large rivers, beaver ponds, and large slack waters (CDFW 2020c). Yearling smolts migrate downstream from as early as February to as late as July (CDFG 2002; Shapovalov and Taft, 1954), with peak migration from April to late May/early June (Weitkamp et al., 1995). A small percentage of coho salmon may rear for more than a year in freshwater (CDFG 2002; Bell and Duffy, 2011).

Suitable habitat includes streams that contain clean loose gravels free of fine sediment for spawning and egg development, adequate pools and natural instream cover for juveniles, connected alcoves and off channel habitats for juveniles to survive winter flows, and clean, cool, water that flows unimpaired and unconstrained from the headwaters to the ocean (NMFS 2012).

Estuarine usage by coho salmon includes the life stage of smolts and spawners. Smolts (juvenile salmon) undergo a physiological change known as "smoltification" enabling them to transition, in estuaries or lagoons, for a life adapted to saltwater. Smoltification can occur primarily within the freshwater areas, or in the nearshore environment. Estuaries should provide cover and adequate feeding habitats to facilitate the transition into the ocean. Estuaries should be deep to provide cool temperatures and buffered with freshwater to dilute seawater. The quality of these areas has implication to the survival of smolts entering the ocean environment (NMFS 2012).

As a spawner, which is the final life-stage of coho salmon, individuals must migrate upstream after heavy late fall or winter rains which breach sandbars and increase water flow, allowing the fish to move into estuarine portions of the river, and ultimately into spawning grounds found in upper reaches of the rivers or stream (NMFS 2012).

Survey Results

CDFW spawning surveys on the upstream portions of Salmon Creek have documented coho salmon periodically since 2008. The creek was only sampled four times from 2008 to 2018 and adult abundance estimates have a high degree of variability during the two years that coho were detected (Table 11; CDFW pers. comm. Sarah Gallagher). Additionally, CDFW documented juvenile coho within Salmon Creek and adjacent tributaries in 2007 (CDFW 2007). Salmon Creek within BSA #1 is used by coho salmon to access upstream spawning areas for rearing and passage during migration and movements to non-natal rearing habitat. Based on CDFW survey data (including CDFW Stream Inventory Reports), the Salmon Creek Watershed likely consistently supports a small population of coho salmon (pers. comm. Sarah Gallagher CDFW 2016).

Table 11. CDFW Annual Adult CCC Coho Abundance Estimates for Salmon Creek

Survey Season	Adult Abundance Estimate	95% Lower Confidence Interval	95% Upper Confidence Interval
2008-2009	0	N/A	N/A
2011-2012	19	N/A	N/A
2012-2013	0	N/A	N/A
2017-2018	88	N/A	N/A

All aquatic habitat within Salmon Creek is designated critical habitat for coho salmon–Central California Coast ESU. This includes all sites from the active channel to the edge of the riparian zone. The reach of Salmon Creek in BSA #1 does not provide elements used by salmonids for spawning; however, it does serve as a migratory corridor for both juveniles and adults to travel to upstream reaches of the watershed for spawning and moderate rearing habitat for juveniles.

Project Impacts

Project activities would not occur within Salmon Creek and ground disturbance activities would take place between June 15 to October 15, avoiding the primary migration periods of CCC coho within the project area (with adults migrating November through February and juveniles out-migrating February through early June). The proposed project activities would be unlikely to directly impact coho as no activities are proposed in the creek. Coho salmon, if present, could be affected by potential water quality changes, visual disturbance, and adjacent upland habitat impacts. These effects, and other potential effects considered, are described below.

Water Quality

There is the potential for unforeseen water quality impacts to suitable aquatic habitat due to project activities occurring adjacent to Salmon Creek. These activities include the removal of vegetation, lead-contaminated soil excavation, equipment staging, and site access. However, these impacts are unlikely with the incorporation of Standard Measures and Best Management Practices outlined in Section 1.3.1.

Increases in turbidity or sedimentation generally have the potential to decrease survivorship of salmonids (such as coho salmon) from loss or reduction of foraging capability, reduced growth, resistance to disease, displacement of species from established territories, and

potentially stimulating downstream migration (Bash et al., 2001). The effects of suspended sediments may be sub-lethal or lethal, and are generally correlated to the concentration of sediment within the water column. The sub-lethal effects of turbidity generally include avoidance and dispersion, reduced feeding and growth, respiratory impairment, reduced tolerance to disease and toxicants, and physiological stress.

The project would implement BMPs and Standard Measures and Best Management Practices outlined in Section 1.3; therefore, the concentration of suspended sediment and duration of exposure to adults and juvenile salmonids would be expected to be low and below the thresholds for physiological stress. In addition, the total volume of suspended sediment generated by these activities is not expected to cause substantial sediment deposition, with sediments likely to move downstream into the open ocean. In the event that sediment is accidentally introduced to Salmon Creek during construction, any juvenile coho immediately downstream of construction activities may be temporarily exposed to elevated turbidity and suspended sediment, forcing them to move away from cover and seek suitable habitat upstream or downstream of these areas. Any disruptions in normal activities would be temporary and unlikely to decrease the fitness of individual coho salmon.

Potential sources of contaminants include refueling and staging equipment in the project area. If an accidental spill should occur, there could be a localized, temporary impact to water quality. The accidental introduction of chemical contamination can alter fecundity, increase disease, shift biotic communities, and reduce the overall health of migrating salmon. With incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3, which include provisions for the proper handling, storage, and disposal of contaminants, localized degradation of water quality from construction-related spills and contaminants is unlikely and the potential effects to salmonids would be discountable.

Wetland fill encroachment could potentially cause an increase in peak flow and higher runoff volumes that could lead to channel scouring and bank erosion which, in turn, could increase sediment and turbidity in receiving waters. It may also lead to decreased storage capacity and outflow efficiency, thereby negatively affecting floodplain processes that are important for salmonids. The removal of riparian vegetation could result in reduced channel shading and increased water temperatures, thus potentially affecting water chemistry by decreasing the concentration of dissolved oxygen.

Potential adverse effects of increased turbidity, suspended sediment, and contaminant exposure on listed species and aquatic habitat would be avoided or minimized through implementation of the Standard Measures and Best Management Practices identified in Section 1.3. With work activities along the banks of Salmon Creek restricted to June 15th to October 15th and implementation of standard erosion and sediment control measures, pollution prevention measures, and stormwater treatment measures, potential environmental effects would be temporary and localized, limited to minor increases in turbidity and suspended sediment during in-channel construction activities. Potential effects would likely be limited to temporary displacement (i.e., avoidance) and re-distribution of salmonids immediately downstream or upstream of work areas in response to brief periods of elevated turbidity and suspended sediment associated with channel-disturbing activities.

Visual Disturbance

Project activities occurring immediately adjacent to Salmon Creek may cause a behavior response to coho salmon from noise and visual disturbance during the restricted work period of June 15 to October 15. Visual disturbances could result from lead-contaminated soil removal activities adjacent to Salmon Creek. Visual disturbances may temporarily harass fish, disrupt or delay normal activities, or increase potential exposure or vulnerability to predators. The potential magnitude of effects depends on a number of factors including type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities. It is anticipated the visual effects on fish would be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating adjacent to the water body.

Habitat Impacts

The proposed project may result in temporary indirect impacts to coho critical habitat along the banks of Salmon Creek, east of the Salmon Creek Bridge. Temporary disturbances would result from removal of vegetation as part of the sandblast waste abatement process. These temporary impacts would be expected to have minimal effects on the function of Salmon Creek as a migratory corridor and rearing area for salmonids. Additionally, with incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3, impacts would be temporary and minimized. These measures include items such as the Revegetation Plan and the implementation of BMPs. With implementation of these measures, project activities are unlikely to appreciably diminish the value of primary constituent elements of coho critical habitat.

Under FESA, the project ***may affect, but is not likely to adversely affect*** coho salmon–Central California Coast ESU or their critical habitat. Caltrans anticipates pursuing Section 7 informal consultation with NMFS via the existing *2013 Programmatic Biological Opinion and Essential Fish Habitat Consultation* currently in place with NMFS (NMFS 2013).

Under CESA, the proposed project would not result in ***"take"*** of coho salmon with implementation of the Standard Measures and Best Management Practices outlined in Section 1.3.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices outlined in Section 1.3, such as the requirement for BMPs to protect water quality and the presence of a biologist for all work activities adjacent to Salmon Creek, are expected to minimize potential impacts. If it is determined that consultation with NMFS is required and the consultation results in the recommendation for additional avoidance and minimization measures (reasonable and prudent measures) to reduce impacts to salmonids, Caltrans would include these measures as part of the project. Specifically, any avoidance and minimization measures resulting from the Section 7 consultation process would be incorporated.

Compensatory Mitigation

With incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3, it is anticipated project impacts would result in discountable and/or insignificant effects to CCC coho salmon and, as the direct take of coho salmon is not anticipated, no compensatory mitigation is proposed.

No compensatory mitigation is proposed for potential project impacts to coho critical habitat or EFH because implementation of the avoidance and minimization efforts described above would ensure impacts to critical habitat and EFH are temporary, minimized as much as possible, and fully restored.

Cumulative Impacts

Cumulative impacts to CCC coho salmon could result from construction of other general development projects in Mendocino County. Other Caltrans projects in the area (e.g., Salmon Creek Bridge, Albion Bridge) are currently expected to result in minimal impacts of CCC coho salmon. Avoidance and minimization measures would be incorporated as conditions of regulatory permits for this project; therefore, it is expected that construction of

the proposed project would not add to the cumulative loss of coho salmon or their habitat with implementation of the Standard Measures and Best Management Practices outlined in Section 1.3. As such, the project's effect would not be cumulatively considerable.Pacific Lamprey

Pacific lamprey (*Entosphenus tridentatus*), a CDFW SSC, are parasitic, anadromous fish (born in freshwater streams, migrate out to the ocean, and return to fresh water as mature adults to spawn). Historically, the distribution of Pacific lamprey was thought to be similar to salmon and steelhead; however, recent data indicates their distribution has been reduced in many areas for most of the same reasons that salmon and steelhead populations have declined, most notably dam construction (Reid and Goodman, 2017). Both historical and current abundance and distribution data are lacking. Pacific lamprey is currently found along the coast of the Pacific Ocean from Japan to Baja California (Moyle et al., 2015).

After about one to three years in the ocean, adult Pacific lampreys migrate to fresh water to spawn between February and June. Adults can spawn right away; building a gravel nest by lifting and digging. The eggs hatch into the ammocoete larvae in about 19 days, and drift downstream to slow velocity, freshwater areas with sandy bottoms. Ammocoete larvae live in the silt, sand and detritus substrates as filter feeders for 3-7 years, then transform to juvenile microphthalmia. Microphthalmia begin their downstream migration to the ocean in winter and spring when rains increase stream flows that passively carry fish to main stem rivers and eventually the ocean.

Survey Results

Focused surveys for Pacific lamprey have not been conducted for the proposed project. CNDDB reports occurrences of the species approximately 19 miles north of the ESL in Ten Mile River. Although no detections of this species have been reported in Salmon Creek, habitat observed within the ESL would support migrating adults and lamprey microphthalmia. It is likely ammocoete larvae would be located further upstream of the project area, outside of the tidally influenced portion of the creek. Adult and juvenile migration would occur when the sandbar is breached and a connection to the Pacific Ocean is created.

Project Impacts

Project activities adjacent to Salmon Creek would take place between June 15 to October 15, avoiding the primary migration periods of Pacific lamprey within BSA #1 (with adults migrating February through June and juveniles and adults out-migrating during the winter and spring). Impacts to Pacific lamprey are not anticipated as no construction activities would occur within Salmon Creek and it is unlikely lamprey would be within the immediate project vicinity due to tidal influence during the summer months. In the unlikely event lamprey are present within Salmon Creek during construction activities, individuals could be affected by potential water quality changes, visual disturbance, and habitat impacts. These effects would be similar to those identified for CCC coho salmon and NC steelhead.

Given the temporary nature of the work, and implementation of the Standard Measures and Best Management Practices to reduce project impacts (Section 1.3), the proposed project is not likely to result in population-level effects to Pacific lamprey.

Avoidance and Minimization Efforts

The Standard Measures and Best Management Practices outlined in Section 1.3, such as the requirement for BMPs to protect water quality and the presence of a biologist for all work activities adjacent to Salmon Creek, would minimize potential impacts. No additional avoidance and minimization measures are proposed.

Compensatory Mitigation

Project-related impacts to Pacific lamprey would be minimized with incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3 and would be temporary in nature. As the proposed project is not likely to have a substantial impact on Pacific lamprey, no compensatory mitigation would be required.

Cumulative Impacts

Cumulative impacts to Pacific lamprey could result from construction of other general development projects in Mendocino County. Other Caltrans projects in the area (i.e., Albion Bridge, Salmon Creek Bridge) are not currently expected to result in effects to Pacific lamprey. Avoidance and minimization measures would be incorporated as conditions of regulatory permits for this project; therefore, construction of the proposed project would not add to the cumulative loss of Pacific lamprey or their habitat with the implementation of the

standard measures outlined in Section 1.3. As such, the project's effect would not be cumulatively considerable.

Steelhead Trout–Northern California DPS

The steelhead trout (*Oncorhynchus mykiss irideus*)–Northern California DPS is federally threatened and state endangered. Their range spans from coastal river basins from Redwood Creek to the Russian River. Steelhead in Salmon Creek are winter-run fish (NMFS 2016) that enter coastal streams as sexually mature adults between November and February (Moyle 2002). Successful migration depends on rainfall or snow melt and sufficient stream flow to provide suitable conditions to upstream spawning areas. Critical habitat for steelhead–Northern California DPS was designated on September 2, 2005 (70 FR 52488).

Steelhead are born in freshwater streams with newly emerged fry generally occupying shallow waters along stream margins, whereas larger juveniles maintain territories in faster and deeper water in pools or runs. Juvenile steelhead prefer streams with cool, clear, fast-flowing riffles, ample riparian cover and undercut banks, and abundant food (Moyle 2002). Optimal temperatures for growth vary depending on food availability but generally range from 50° Fahrenheit (F) to 63°F (10 degrees Celsius (°C) to 17°C) (Moyle et al., 2008). Steelhead typically rear in streams or estuaries for 1 to 2 years before entering the ocean. Smoltification, the physiological process that enables juveniles to survive in the ocean, occurs in early spring. Peak downstream movements typically occur in April or May, although young of the year have been reported to migrate to estuaries as early as February and as late as June (Moyle et al., 2008; pers. comm. Sarah Gallagher CDFW).

Survey Results

CDFW spawning surveys upstream from BSA #1 have documented steelhead periodically within Salmon Creek since 2008. The creek was only sampled four times from 2008 to 2018 and adult abundance estimates have a high degree of variability during the two years steelhead were detected (Table 12; pers. comm. Sarah Gallagher CDFW). Additionally, CDFW documented juvenile steelhead within Salmon Creek and adjacent tributaries in 2007 (CDFW 2007). Salmon Creek within BSA #1 is used by steelhead to access upstream spawning areas for rearing and passage during migration and movements to non-natal rearing habitat. Based on CDFW survey data (including CDFW Stream Inventory Reports), the Salmon Creek Watershed likely consistently supports a small population of steelhead (pers. comm. Sarah Gallagher CDFW 2016).

Table 12. CDFW Annual Adult Steelhead Abundance Estimates for Salmon Creek

Survey Season	Adult Abundance Estimate	95% Lower Confidence Interval	95% Upper Confidence Interval
2008-2009	10	0	21
2011-2012	233	N/A	N/A
2012-2013	30	19	37
2017-2018	0	N/A	N/A

All aquatic habitat within Salmon Creek is considered critical habitat for steelhead–Northern California DPS. This includes all sites from the active channel to the top of bank, which is approximately 0.40 acre within BSA #1. The reach of Salmon Creek in BSA #1 does not provide elements used by steelhead for spawning; however, it does serve as a migratory corridor for both juveniles and adults to travel to upstream reaches of the watershed for spawning and rearing, and provides moderate rearing habitat for juveniles.

Project Impacts

Project activities are not anticipated to occur within Salmon Creek and any adjacent ground disturbing activities would take place between June 15 to October 15, avoiding the primary migration periods of steelhead–Northern California DPS within the ESL (with adults migrating November through February and juveniles out-migrating February through early June). Steelhead, if present in Salmon Creek, would not be directly impacted by project activities but could be affected by potential water quality changes and visual disturbance. These effects would be similar to those identified for CCC coho salmon.

Given the temporary nature of the work, and implementation of the Standard Measures and Best Management Practices to reduce project impacts (Section 1.3), the proposed project is not likely to result in substantial population-level effects to steelhead–Northern California DPS.

Under FESA, the project ***may affect, but is not likely to adversely affect*** NC steelhead and their critical habitat. Caltrans anticipates pursuing Section 7 informal consultation with NMFS via the existing *2013 Programmatic Biological Opinion and Essential Fish Habitat Consultation* currently in place with NMFS (NMFS 2013).

Avoidance and Minimization Efforts

Implementation of the Standard Measures and Best Management Practices outlined in Section 1.3, such as the requirement for BMPs to protect water quality and the presence of a biologist for all work activities adjacent to Salmon Creek, are anticipated to minimize potential impacts.

Compensatory Mitigation

Project-related impacts to steelhead–Northern California DPS would be minimized with the incorporation of Standard Measures and Best Management Practices (Section 1.3) and would be temporary in nature; therefore, compensatory mitigation would not be required for steelhead–Northern California DPS.

Cumulative Impacts

Cumulative impacts to NC steelhead could result from construction of other general development projects in Mendocino County. Other Caltrans projects in the area (e.g., Salmon Creek Bridge, Albion Bridge) are currently expected to result in minimal impacts to CCC coho salmon. Avoidance and minimization measures would be incorporated as conditions of regulatory permits for this project; therefore, construction of the proposed project is not anticipated to add to the cumulative loss of steelhead or their habitat with implementation of the Standard Measures and Best Management Practices outlined in Section 1.3. As such, the project's effect would not be cumulatively considerable.

Tidewater Goby

Tidewater goby was listed as federally endangered in 1994 (59 FR 5494) and is a CDFW SSC. The geographic range of tidewater goby is limited to the coast of California, although the species is naturally absent from several large (50 to 135 miles) stretches of coastline that lack lagoons or estuaries or have steep topography or swift currents that may prevent tidewater goby from dispersing between adjacent localities.

Critical habitat for southern tidewater goby populations was designated on November 20, 2000, and critical habitat for northern populations was designated on January 31, 2008. On February 6, 2013, USFWS published the final rule designating critical habitat covering approximately 12,156 acres in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles,

Orange, and San Diego counties (78 FR 8746, February 6, 2013). Salmon Creek is not designated as critical habitat.

The tidewater goby is a small, benthic, grey-brown fish that typically lives one year, although some individuals may live longer (Moyle 2002). All life stages of tidewater goby are found in lagoons, estuaries, and marshes; dynamic environments that are subject to considerable fluctuation in salinity and water quality conditions both seasonally and annually (78 FR 8749, February 6, 2013). Tidewater goby typically select habitat in the upper estuary, where fresh water and salt water mix, although they may range upstream a short distance into fresh water and downstream into more saline water. The species prefers habitats with salinity less than 12 parts per thousand (ppt); conditions that typically occur at the upper edge of large tidal bays near the entrance of freshwater tributaries and in coastal lagoons formed at the mouths of coastal rivers, streams, or seasonally wet canyons.

Reproduction can occur at any time of the year, but it tends to peak in spring, with a second, smaller peak in late summer (USFWS 2005). Reproduction has been observed at water temperatures ranging from 48°F to 77°F (9°C to 25°C) and at salinities of 2 to 27 ppt (Swenson 1999, *as cited in* USFWS 2005). Male tidewater gobies initiate spawning by digging a vertical burrow 4 to 8 inches deep in unconsolidated, clean, coarse sand or mud substrates with minimal vegetative cover. Coarse sand appears to be the preferred substrate over substrates that are too fine or too coarse (such as silt and gravel) (USFWS 2005). Females fight for access to males with burrows in which to lay their eggs, and they lay 300 to 500 eggs per clutch in 6 to 12 clutches per year. Following hatching, the larvae live in vegetated areas of estuaries until they have matured sufficiently to become free-swimming and benthic. Juvenile tidewater goby feed on small aquatic animals, such as shrimp, amphipods, ostracods, and midge larvae and other aquatic insects (USFWS 2005). Those that survive mature to breed the next season.

Survey Results

The portion of Salmon Creek within BSA #1 has been evaluated for potential presence of tidewater goby habitat during multiple site visits. Salmon Creek has a small estuary that supports several of the primary constituent elements of tidewater goby habitat substrates suitable for burrowing, as well as emergent vegetation. The creek is also intermittently cut off from the ocean by a sandbar, although this sandbar is very thin and is thought to be breached regularly during high tide events, likely making the salinity within the creek less than ideal to sustain goby. Additionally, the amount of brackish estuary habitat created by the sandbar is limited. The last fisheries survey to assess tidewater goby was conducted in

1975, and no gobies were found (pers. Communication Steve Kramer USFWS). Surveys for the presence of tidewater goby using eDNA sampling techniques were conducted by Caltrans in 2019 and 2020, with cooperation from Humboldt State University, and included multiple sampling locations in the estuarine portion of Salmon Creek. Tidewater goby eDNA was not detected in Salmon Creek during these surveys.

Project Impacts

Although tidewater goby have not been detected in Salmon Creek and it is unlikely that they occur, they are presumed to potentially be present during construction of the project. However, the project is not expected to directly affect tidewater goby as construction activities would not occur within Salmon Creek. Construction activities adjacent to Salmon Creek would take place between June 15 to October 15, avoiding the peak reproductive period. If tidewater goby are present within Salmon Creek during construction activities, individuals could be affected by potential water quality changes, visual disturbance, and habitat impacts. These effects would be similar to the impacts identified for coho salmon and steelhead.

Given the temporary nature of the work, and implementation of the Standard Measures and Best Management Practices to reduce project impacts (Section 1.3), the proposed project is not anticipated to result in population-level effects to tidewater goby.

Under FESA, the project ***may affect, but is not likely to adversely affect*** tidewater goby and would have ***no effect*** on their critical habitat, as there is no designated critical habitat in Salmon Creek.

Caltrans anticipates pursuing *informal* Section 7 consultation with USFWS via the *Programmatic Informal Consultation for the California Department of Transportation's Routine Maintenance and Repair Activities, and Small Project Program for Districts 1 and 2* (PLOC) (USFWS 2022c).

Avoidance and Minimization Efforts

Standard Measures and Best Management Practices outlined in Section 1.3, such as the requirement for BMPs to protect water quality and the presence of a biologist for all work activities adjacent to Salmon Creek, would be incorporated to minimize potential impacts. Caltrans would also include all applicable avoidance and minimization measures outlined for the species indicated in the PLOC (USFWS 2022c).

Compensatory Mitigation

Project-related impacts to tidewater goby habitat would be minimized with incorporation of the Standard Measures and Best Management Practices outlined in Section 1.3, and would be temporary in nature; therefore, compensatory mitigation is not proposed for this species.

Cumulative Impacts

Cumulative impacts to tidewater goby could result from construction of other general development projects in Mendocino County. Other Caltrans projects in the area (specifically the project at Pudding Creek Bridge) are currently expected to result in potential impacts to tidewater goby. The project would require extensive involvement/oversight from both USFWS and CDFW, whose objective is to protect aquatic resources, especially special status aquatic species. Avoidance and minimization measures would be incorporated as conditions of regulatory permits for this project; therefore, construction of the proposed project would not add to the cumulative loss of tidewater goby or their habitat with the implementation of Standard Measures and Best Management Practices outlined in Section 1.3. As such, the project's effect would not be cumulatively considerable.

4.3.4. MAMMALS

Bat Species

Three CDFW SSC bat species could potentially occur within BSA #1, including pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat (*Lasiurus blossevillii*).

Pallid bat typically occurs at lower elevations throughout California in a variety of habitats, including grasslands, shrublands, and woodlands, and are most common in open, dry habitats with rocky areas for roosting (Zeiner et al., 1990). This species may roost alone, in small groups, or gregariously in crevices in rocky outcrops and cliffs, caves, mines, tree hollows, exfoliating tree bark, and various human structures, such as bridges and buildings (Western Bat Working Group 2005). Maternity colonies form in early April, generally comprising 12 to 100 individuals. These colonies then disperse between August and October (Western Bat Working Group 2005).

Townsend's big-eared bat is known to occur in habitats throughout California, including coniferous forests, native prairies, riparian communities, active agricultural areas, and coastal areas (Western Bat Working Group 2017). This species typically roosts in caves, tunnels, mines, buildings, and other cave-like spaces, including rock crevices and hollow trees. A

relatively sedentary species, the bats hibernate near summer maternity roosts and are at their hibernacula from October to April. Townsend's big-eared bat are extremely sensitive to disturbance of roosting sites and a single visit may result in abandonment of the roost site (CDFW 2017e).

Western red bat is locally common to some areas of California and occurs from Shasta County south to the Mexican border and west of the Sierra Nevada/Cascade crest and desert. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. Roosting typically occurs primarily in the foliage of trees and less often in shrubs. Day roost sites are generally located in habitat mosaics or edge habitat near streams, fields, or urban areas.

Survey Results

No bats or signs of bats (guano, urine staining and vocalizations) were observed during any site surveys (2019). However, bat species have been detected historically in sites near the project area and a CNDDB occurrence of Townsend's big eared bat was documented approximately 1.5 miles south of the ESL at the mouth of the Navarro River (CDFW–CNDDB 2022a).

Potential night roosting was documented in the surrounding riparian and coniferous forest habitat, although limited due to the lack of fresh water (limiting prey availability) and location on the immediate coastline where wind, rain and fog create unstable conditions. While expected to roost primarily in well-developed wooded riparian areas with greater species diversity near a fresh water source, tree roosting bats (such as the western red bat) may roost in tree foliage virtually anywhere in forest habitats. Large trees, crevices, space under sloughing bark on trees, and tree hollows within BSA #1 may provide suitable roosting habitat for pallid bat.

Project Impacts

Project activities, including vegetation removal and noise from construction, have the potential to negatively impact bats, resulting in potential roost abandonment and subsequent loss of the colony. However, with implementation of the Standard Measures and Best Management Practices outlined in Section 1.3, impacts to special status bat species are not anticipated.

Avoidance and Minimization Efforts

Since project-related impacts to special status bat species are not anticipated, additional species-specific avoidance and minimization measures are not proposed.

Compensatory Mitigation

Since project-related impacts to special status bat species are not anticipated, compensatory mitigation is not proposed.

Cumulative Impacts

Since project-related impacts to special-status bat species are not anticipated, cumulative impacts are not expected.

Pacific Harbor Seal

Pacific harbor seal (*Phoca vitulina richardii*), a species protected under the Marine Mammal Protection Act (MMPA), has the potential to occur within BSA #1. Specifically, the beach and tidal rocks of Whitesboro Cove to the west of the ESL provides suitable haul-out rest sites for the species.

The MMPA prohibits the taking (harassment, injury, or killing) of marine mammals unless exempted by the MMPA or authorized under a permit for Incidental Take that occurs under otherwise lawful activities (Sections 101(a)(5)(A)). NMFS/NOAA are responsible for issuing incidental take authorizations for activities that may impact marine mammals, such as Pacific harbor seal. This harassment falls under two categories:

- Level A: any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild or,
- Level B: any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Survey Results

Pacific harbor seals were not observed within Salmon Creek or Whitesboro Cove during 2013, 2014, 2015, 2020, and 2021 surveys. While Salmon Creek does not provide ideal habitat for the species, Pacific harbor seals have been observed north of the ESL within the Albion Cove and Albion River periodically and are known to use the Albion River as a corridor to travel to haul-out locations near Schooners Landing (Maahs and Cannata, 1998). There is also a known haul-out location located off the coast at Albion Head, approximately 0.85 mile northwest of the ESL, where Pacific harbor seals are known to haul-out during the day (Earthworks 2013).

Project Impacts

There is the potential that Pacific harbor seal would be affected by construction activities during vegetation removal and soil removal/hauling portions of the proposed project. If individuals of the species are present on Whitesboro Cove beach prior to work activities, it is possible that the noise from construction activities would cause them to leave the beach, resulting in *incidental take* as defined under the MMPA.

This level of harassment would fall under the Level B Harassment category defined above and would require Caltrans to request an Incidental Take Harassment Authorization (IHA) from NMFS/NOAA. An IHA permits the incidental, but not the intentional, take of marine mammals.

Avoidance and Minimization Efforts

To avoid the potential for harassment of Pacific harbor seals, and subsequent incidental take, a Marine Mammal Monitoring Plan (in coordination with NMFS) would be prepared prior to construction (Section 1.3–Measure AS-5). The plan would include observation of the bay (i.e., seal habitat) by a qualified biological monitor prior to beginning construction activities to determine if any marine mammals are within a predetermined safety zone before or during construction. The biological monitor would have the authority to stop work activities until they have confirmed the species is off site or has moved a distance that is believed to be out of range for disturbance.

Compensatory Mitigation

With the avoidance and minimization measures outlined above, impacts to Pacific harbor seals are not anticipated; therefore, compensatory mitigation is not proposed.

Cumulative Impacts

With implementation of the Standard Measures and Best Management Practices identified in Section 1.3, impacts to Pacific harbor seals are not anticipated, and the proposed project's effect would not be cumulatively considerable.

4.3.5. INVERTEBRATES

Butterflies

The Behren's silverspot butterfly (*Speyeria zerene behrensii*) (BSSB) and lotis blue butterfly *(Lycaeides argyrognomon lotis)* (LBB) are both federally endangered. The BSSB was listed as an endangered species under FESA on December 5, 1997 (62 FR 65306). The lotis blue butterfly (LBB) was listed as an endangered species under FESA on June 1, 1976 (41 FR 22041). No associated rulemakings have been completed for either species since that time. No critical habitat has been designated for either species.

The BSSB range extends from north of the Russian River (Sonoma County) to roughly MacKerricher State Park (Mendocino County) (USFWS 2012a, 2012b). Four sites are known to be occupied by BSSB, from Manchester (Mendocino County) south to Salt Point State Park (Sonoma County) (USFWS 2012a, 2012b). There are also historic and potential sites as far north as the town of Mendocino (USFWS 2012a, 2012b).

The BSSB is associated with stabilized coastal dunes and grassland habitats that contain early blue violet, their larval host plant (USFWS 2012a, 2012b). Eggs are laid on early blue violet (*Viola adunca*), and adults hatch in approximately three weeks. The adult flight season is generally from mid-to late June through September or early October, and peaks in mid-July to mid-August (USFWS 2012a, 2012b). Adults can be found foraging a few miles inland, particularly in pocket meadows, grassy swales, and other sheltered areas, from the immediate coast (Arnold 2014). Adults require nectar plants, shelter from coastal winds, and inland meadows where adults are active when coastal conditions are foggy (Arnold 2014). Nectar plants include bull thistle (*Cirsium vulgare*), milk thistle (*Silybum marianum*), hairy cat's ear, California aster (*Symphyotrichum chilensis*), groundsel (*Senecio sylvaticus*) and seaside daisy (*Erigeron glaucus*) (Arnold 2014; USFWS 2012a).

Historically, the LBB was found in several coastal locations, primarily in Mendocino County between Point Arena and Fort Bragg, northern Sonoma County, and possibly northern Marin County (USFWS 2007). At the time of listing, the LBB was only known from one location, approximately 2 miles north of the town of Mendocino. Despite multiple surveys and the presence of suitable habitat, the species has not been observed at that site or elsewhere since 1983 (USFWS 2007). Little is known about the biology and ecology of the LBB (USFWS 2007). Based on the life history of other subspecies of the northern blue butterfly, the LBB is associated with coastal wet meadows and sphagnum willow bogs. The last known site for this species was in a sphagnum bog surrounded by pygmy forest dominated by Bishop pine (*Pinus muricata*) (USFWS 2007); this suggests bogs may also be LBB butterfly habitat.

The adult flight period for LBB is believed to be similar to other *Plebejus* species, occurring from mid-April to early July (Downey 1975). During the adult flight season, eggs are laid on larval host plants, which is presumed to be harlequin lotus and potentially other species such as streambank lotus (*Hosackia oblongifolia*), bog lupine (*Lupinus polyphyllus),* and Whitney's milk vetch (*Astragalus whitneyi*) (USFWS 1985; Pratt 2003, 2004).

Survey Results

Caltrans initially contracted Dr. Richard Arnold of Entomological Consulting Services, an expert in the field of entomology, including those in genus *Speyeria* and *Lycaenidae*, to conduct USFWS protocol-level BSSB and LBB surveys in 2014 and 2015 (Arnold 2014, 2015). Surveys for both species were updated in 2020 and 2021 for butterflies and host plants. The surveys were consistent with the *Draft Protocol for Presence-Absence Surveys of the Endangered Lotis Blue Butterfly* (USFWS 2008) and *Draft Guidelines for Habitat Assessments and Surveys for Behren's Silverspot Butterfly* (*Speyeria zerene behrensii*) (USFWS 2014).

No life stages of either butterfly were observed during these surveys, despite the presence of suitable larval host and nectar plants (Appendix J) (Arnold 2014, 2015). The limited occurrence of early blue violet within BSA #4 suggests that this area is likely used for adult foraging more than larval development, whereas the abundance of harlequin lotus suggests the BSA could be used for breeding habitat for the LBB (Arnold 2014). If present, the BSSB would likely use sheltered pocket meadows located beyond the eastern boundary of BSA #4 (Arnold 2014).

Several populations of nectar plants identified as important habitat or food sources for LBB and BSSB were identified in BSA #4. Populations of seaside daisy, hairy cat's ear, bull thistle, milk thistle, and groundsel were documented within the butterfly survey area (i.e., 330-foot buffer) in "somewhat limited numbers" that could support these butterflies (Arnold 2015). During the 2020 and 2021 field season, approximately 12.75 acres of harlequin lotus and several patches of early blue violet (totaling 2.75 acres) were mapped in the southern portion of BSA #4 (Appendix J).

Based on the results of two years of presence-absence and habitat assessment surveys, Arnold (2015) concluded that the BSSB and LBB do not occur within BSA #4 at this time. Protocol-level detection surveys conducted by Caltrans in 2020 and 2021 also produced negative results, although only three of the six surveys were able to be conducted for LBB in 2020 due to weather events and unforeseen circumstances. In combination with historic survey results at other locations in Mendocino County for both species, it is unlikely that either butterfly occurs within the project area.

Project Impacts

Temporary impacts to BSSB and LBB host plant*s* may occur from vehicle and equipment staging. Specifically, 0.43 acre of dog violet (BSSB host plant) may be temporarily impacted within the staging area proposed on the Funke parcel and 1.53 acres of harlequin lotus (LBB host plant) may be temporarily impacted within the other proposed staging areas.

While adult butterflies may utilize the available grassland habitats within BSA #4, project-related impacts to BSSB and LBB individuals are not anticipated as neither species are expected to occur within the project ESL.

Under FESA, the project ***may affect, but is not likely to adversely affect*** BSSB and LBB. Caltrans anticipates pursuing Section 7 informal consultation with USFWS for both species.

Avoidance and Minimization Efforts

Implementation of the Standard Measures and Best Management Practices outlined in Section 1.3 would minimize impacts to BSSB and LBB host plants. These measures include environmental awareness training, ESA fencing, and revegetation of disturbed areas with host plant species. The Revegetation Plan would be developed and implemented by a restoration specialist as permits dictate.

Compensatory Mitigation

Since impacts to BSSB and LBB are not expected, compensatory mitigation is not proposed for either species.

Cumulative Impacts

Cumulative impacts to BSSB, LBB, and their habitats could result from construction of other general development projects in Mendocino County. Other Caltrans projects in the area (e.g., Albion) are anticipated to have minimal impacts to the listed butterfly habitats because these projects occur in areas that have been heavily disturbed and support marginal habitat. Construction of the proposed project would not add to the cumulative loss of habitat because the temporary impacts to habitat is relatively small and degraded; therefore, the project's effect would not be cumulatively considerable.

Bumble Bees

The Western bumble bee (*Bombus occidentalis*) is a state candidate endangered species. Formerly found in much of California, the Western bumble bee range is now much reduced in abundance and mostly restricted to high meadows of the Sierra Nevada ranges and coastal environments (CDFW 2018b; Williams et al., 2014). The species has been documented from southern British Columbia, Canada, south to multiple western states, including California. There are observations of the Western bumble bee on the northern California coast (CDFW 2020b), although Evans et al. (2008) reports a collapse of the Western bumble bee population in northwest California and southwest Oregon.

Western bumble bee has three basic habitat requirements: undisturbed nesting sites for colonies (e.g., abandoned rodent burrows, underground cavities, log cavities, dead vegetation/leaf litter, abandoned bird nests), availability of nectar and pollen from floral resources, and suitable sites for the queen (e.g., friable soil and under plant litter and trees). Western bumble bee nests, forages, and overwinters in meadows and grasslands with abundant floral resources and may be found in some natural areas within urban environments (Williams et al., 2014). The bees are generalist foragers, but require floral resources throughout the flight period (from early February to late November). The flight period for the Western bumble bee in California is from early February to late November, peaking in late June and late September; the flight period for workers and males is from early April to early November (CDFW 2018b). Little is known about the overwintering sites of the Western bumble bee (CDFW 2018b); however, Hobbs (1968) reported Western bumble bee hibernacula that were 2 inches deep in a "steep west slope of the mound of earth" and may

also be found in above-ground nests, such as log cavities. Overwintering sites are likely in friable soil or under plant litter or debris (CDFW 2018b).

Survey Results

No Western bumble bees or their nests were found in the project vicinity during 2013, 2014, 2020, or 2021 surveys, although focused bumble bee surveys were not conducted. There are, however, collection records for Western bumble bee from 1923 and 1950 approximately 2 miles north of the project ESL, reported in the vicinity of the community of Little River, south of Van Damme State Park (CDFW 2022a).

BSA #1 provides suitable nesting, overwintering, and foraging habitat for both species. Coastal silk tassel scrub, coyote brush scrub, and coastal bramble habitat would provide suitable foraging resources for Western bumble bee. Landscaped and disturbed areas may also provide suitable foraging resources.

Project Impacts

Proposed construction activities could impact Western bumble bee if individuals or colonies are present in the project vicinity during construction. Generally, activities that significantly disturb native, fallow, or relatively undisturbed soils could affect colonies or overwintering sites, if they are present. Additionally, activities that remove significant concentrations of flowering plants could impact the ability of both species to find suitable pollen and nectar sources (if there are nearby colonies).

Construction of the project would take place in suitable habitat for Western bumble bee, and temporary construction activities from the sandblast waste cleanup may result in mortality to individual bees if underground nest colonies or overwintering queens are present in the project ESL. There is a large amount of available undisturbed habitat within and adjacent to the ESL that provides higher quality foraging and nesting habitat. This available habitat minimizes the temporary loss of suitable habitat during construction. To further minimize temporary impacts, the Standard Measures and Best Management Practices outlined in Section 1.3, such as the measure that requires the revegetation of disturbed areas with regionally-appropriate native plants, would be implemented post construction.

With incorporation of these Standard Measures and Best Management Practices, the presence of a large amount of available undisturbed habitat within and adjacent to the BSA, and the low likelihood of occurrence for the species, impacts to bumble bees are not anticipated.

Avoidance and Minimization Efforts

With the implementation of the Standard Measures and Best Management Practices outlined in Section 1.3, impacts to Western bumble bee are expected to be minimal and no additional species-specific avoidance and minimization measures are proposed.

Compensatory Mitigation

Since impacts to Western bumble bee are expected to be minimal, no compensatory mitigation is proposed.

Cumulative Impacts

Since impacts to Western bumble bee are expected to be minimal, the proposed work would have no cumulative impact on either species.

CHAPTER 5. CONCLUSIONS AND REGULATORY DETERMINATIONS

5.1. Federal Endangered Species Act Consultation

Informal consultation with NMFS via the Programmatic Biological Opinion (PBO) is anticipated for effects to the following federally listed species and designated critical habitat. Caltrans anticipates the proposed action ***may affect, is not likely to adversely affect:***

- Coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU (pop. 4)—federal endangered and critical habitat
- Steelhead trout (*Oncorhynchus mykiss irideus*)–Northern California DPS (pop. 49)—federal threatened

Informal consultation with USFWS via the PLOC under Section 7 of the Federal Endangered Species Act is anticipated for the following federally listed species. Caltrans anticipates the proposed action ***may affect, is not likely to adversely affect:***

- Tidewater goby (*Eucyclogobius newberryi*)—federal endangered
- Behren's silverspot butterfly (*Speyeria zerene behrensii*)—federal endangered
- Lotis blue butterfly (*Lycaeides argyrognomon lotis*)—federal endangered

Caltrans has determined the project would have ***no effect*** on the following federally listed species, critical habitats, or species proposed for listing:

- Burke's goldfields (*Lasthenia burkei*)–federal endangered
- Contra Costa goldfields (*Lasthenia conjugens*)–federal endangered
- Howell's spineflower (*Chorizanthe howellii*)–federal endangered
- Showy Indian clover (*Trifolium amoenum*)–federal endangered
- California red-legged frog (*Rana draytonii*)–federal threatened
- Marbled murrelet (*Brachyramphus marmoratus*)–federal threatened

- Northern spotted owl (*Strix occidentalis caurina*)–federal
- Short-tailed albatross (*Phoebastria (=Diomedea) albatrus*)–federal endangered
- Western snowy plover (*Charadrius nivosus*)–federal threatened
- Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)–Western U.S. DPS–federal threatened
- Chinook salmon (*Oncorhynchus tshawytscha)* (pop. 17)–California Coast ESU–federal threatened
- Green sturgeon *(Acipenser medirostris)*–Southern DPS–federal threatened
- Blue whale (*Balaenoptera musculus*)–federal endangered
- Fin whale (*Balaenoptera physalus*)–federal endangered
- Guadalupe fur seal (*Arctocephalus townsendi*) – federal threatened
- Humpback whale (*Megaptera novaeangliae*)–federal endangered
- Killer whale (*Orcinus orca*)–Southern Resident DPS–federal endangered
- North Pacific right whale (*Eubalaena japonica*)–federal endangered
- Pacific marten *(Martes caurina)*–Coastal DPS–federal threatened
- Point Arena mountain beaver *(Aplodontia rufa nigra)*–federal endangered
- Sei whale (*Balaenoptera borealis*)–federal endangered
- Sperm whale (*Physeter catodon*)–federal endangered
- Green sea turtle (*Chelonia mydas*)–East Pacific DPS–federal threatened
- Leatherback sea turtle (*Dermochelys coriacea*)–federal endangered
- Olive Ridley sea turtle (*Lepidochelys olivacea*)–federal threatened

5.2. Essential Fish Habitat

The MSA is the primary law governing marine fisheries management in United States federal waters. Provisions of the MSA require consultation with NMFS for actions that may adversely affect EFH for federally managed fish and invertebrates. For the purposes of the MSA, EFH includes "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (MSA § 3(10)).

The project would have ***no adverse effect*** to EFH for coho salmon (*Oncorhynchus kisutch pop. 4*)–Central California Coast ESU. EFH for Chinook salmon (*Oncorhynchus tshawytscha)*, Groundfish, Coastal Pelagics, and Highly Migratory Species is not present within BSA #1.

5.3. California Endangered Species Act Consultation

CESA states that all native species of plants and fish, amphibians, reptiles, birds, mammals, invertebrates and their habitats threatened with extinction or endangered designation would be protected or preserved. Section 2081 of the California Fish and Game Code states CDFW may authorize, by permit, the "take" of endangered species, threatened species, and candidate species if the take is incidental to an otherwise lawful activity and if the impacts of the authorized take shall be minimized and fully mitigated. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking of the species.

Caltrans has determined the project would result in ***no State*** "***take"*** of the following state-listed species, species proposed for listing, or fully protected species:

- Burke's goldfields (*Lasthenia burkei*)–state endangered
- Howell's spineflower (*Chorizanthe howellii*)–state threatened
- Humboldt County milk-vetch (*Astragalus agnicidus*)–state endangered
- Menzies' wallflower (*Erysimum menziesii*)–state endangered
- Monterey clover (*Trifolium trichocalyx*)–state endangered
- Bald eagle *(Haliaeetus leucocephalus)*–state fully protected
- Marbled murrelet *(Brachyramphus marmoratus)*–state endangered
- Northern spotted owl *(Strix occidentalis caurina)*–state threatened

- Osprey *(Pandion haliaetus)*–state watch list
- Peregrine falcon *(Falco peregrinus)*–state fully protected
- Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)–Western U.S. DPS–state endangered
- White-tailed kite *(Elanus leucurus)*–state fully protected
- Coho salmon (*Oncorhynchus kisutch*)–Central California Coast ESU (pop. 4)–state endangered
- Steelhead trout (*Oncorhynchus mykiss irideus*)–Northern California DPS (pop. 49)–state candidate endangered
- Western bumble bee (*Bombus occidentalis*)–state candidate endangered
- Guadalupe fur seal *(Arctocephalus townsendi)*–state threatened and fully protected
- Pacific (Humboldt) marten *(Martes caurina)*–Coastal DPS–state endangered
- Ringtail *(Bassariscus astutus)*–state fully protected

5.4. California Species of Special Concern

The California Department of Fish and Wildlife (CDFW) also maintains a list of animal Species of Special Concern (SSC), most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, CDFW recommends their consideration during analysis of the impacts of the proposed project to protect declining populations and avoid the need to list them as endangered in the future.

With implementation of the Standard Measures and Best Management Practices described in Section 1.3, the proposed project would have "*no impact*" to the following SSC:

- California red-legged frog *(Rana draytonii)*
- Foothill yellow-legged frog–Northwest/North Coast Clade (*Rana boylii*)
- Northern red-legged frog (*Rana aurora*)
- Pacific tailed frog (*Ascaphus truei*)
- Red-bellied newt *(Taricha rivularis)*
- Southern torrent salamander *(Rhyacotriton variegatus)*
- Ashy storm-petrel *(Oceanodroma homochroa)*

- Olive-sided flycatcher (*Contopus cooperi*)
- Purple martin (*Progne subis*)
- Tri-colored blackbird *(Agelaius tricolor)*
- Tufted puffin *(Fratercula cirrhata)*
- Yellow-breasted chat (*Icteria virens*)
- Yellow warbler (*Setophaga petechia*)
- Western snowy plover *(Charadrius nivosus)*
- Northern coastal roach *(Hesperoleucus venustus navarroensis)*
- Pacific lamprey *(Entosphenus tridentatus)*
- Tidewater goby (*Eucyclogobius newberryi*)
- Pacific fisher *(Pekania pennanti)*–West Coast DPS
- Pacific (Humboldt) marten *(Martes caurina)*–Coastal DPS
- Pallid bat (*Antrozous pallidus*)
- Point Arena mountain beaver *(Aplodontia rufa nigra)*
- Sonoma tree vole *(Arborimus pomo)*
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western red bat (*Lasiurus blossevillii*)
- Western Pond Turtle (*Actinemys marmorata*)

5.5. Wetlands and Other Waters Coordination

The project would have both permanent and temporary impacts to jurisdictional Waters of the U.S.(WOTUS)/Waters of the State, riparian habitat, and coastal wetlands (as defined by the California Coastal Act). This includes approximately 0.231 acre of permanent impacts and 0.012 acre of temporary impacts to wetland WOTUS/Waters of the State, 0.014 acre of temporary impacts to non-wetland WOTUS/Waters of the State, 0.954 acre of permanent impacts and 0.56 acre of temporary impacts to coastal wetlands, and 0.839 acre of temporary impacts to riparian habitat.

Caltrans would coordinate with USACE, CDFW, CCC, NCRWQCB, and the County of Mendocino regarding wetlands and other waters affected by the project. Appropriate mitigation would be implemented to offset the permanent and temporary impacts to wetlands and other waters. The project would require a Coastal Development Permit, USACE Section 404 Nationwide Permit (NWP) 38, and Section 401 Water Quality Certification from the NCRWQCB.

5.6. Lake and Streambed Alteration Agreement

California Fish and Game Code (CFGC) Section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW before beginning any activity that would substantially modify a river, stream, or lake.

Under the current scope of work, a CDFW 1602 Lake and Streambed Alteration Agreement would be obtained for those project activities that have the potential to impact Salmon Creek, intermittent streams, and associated riparian habitats within the ESL.

5.7. Migratory Bird Treaty Act

Federal and state laws protect migratory birds, their occupied nests, and their eggs from destruction. The applicable federal law is the Migratory Bird Treaty Act (15 United States Code [USC] 703-711), 50 CFR Part 21 and 50 CFR Part 10. Protection under California law is found in CFGC Sections 3503, 3513, and 3800.

Migratory bird species are likely to be nesting in the habitats present within BSA #1. To avoid impacts to migratory birds, the Standard Measures and Best Management Practices described in Section 1.3 would be implemented to ensure no birds or occupied nests would be affected by project activities.

5.8. Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) establishes a federal responsibility to conserve marine mammals, with management vested in the Department of Commerce (NOAA's National Marine Fisheries Service [NMFS]) for cetaceans and pinnipeds other than walrus. The Department of the Interior is responsible for all other marine mammals, including sea otter, walrus, polar bear, dugon, and manatee. The MMPA generally assigns identical responsibilities to the Secretaries of the two departments.

The MMPA is the main regulatory vehicle that protects marine mammal species and their habitats in an effort to maintain sustainable populations. In doing so, the statute outlines prohibitions, required permits, criminal and civil penalties, and international aspects in addressing marine mammals. The MMPA requires consultation on any action that may adversely affect marine mammals and provides a mechanism for an "incidental" take of species not listed under the Federal Endangered Species Act (FESA).

To avoid the potential for harassment of Pacific harbor seals within BSA #1, and subsequent incidental take, a Marine Mammal Monitoring Plan would be prepared prior to construction (Measure AS-5 in Section 1.3).

5.9. Invasive Species

Under Executive Order 13112, federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species, including spores, in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

With implementation of Caltrans' Standard Measures and Best Management Practices, the project would avoid the spread of known and potentially occurring invasive species and plant pathogens to ensure invasive species do not proliferate in BSA #1.

5.10. Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all state agencies utilize their authority to carry out programs to conserve endangered and rare native plants (CFGC Sections 1900–1913).

Seasonally appropriate floristic surveys found the following seven special status plants within BSA #1:

- Fringed cornlily (*Veratrum fimbriatum*)–CRPR 4.3
- Harlequin lotus (*Hosackia gracilis*)–CRPR 4.2
- Leafy-stemmed mitrewort *(Mitellastra caulescens)*–CRPR 4.2
- Oregon coast paintbrush (*Castilleja litoralis*)–CRPR 2B.2
- Pacific gilia (*Gilia capitata* ssp. *pacifica*)–CRPR 1B.2

- Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*)–CRPR 1B.2
- Swamp harebell (*Campanula californica*)–CRPR 1B.2

Implementation of the Standard Measures and Best Management Practices detailed in Section 1.3 would avoid and minimize impacts to special status plants within BSA #1.

5.11. California Coastal Act

The ESL is within the Coastal Zone regulated under the California Coastal Act (CCA). The CCA delegates power to local governments to enact their own Local Coastal Program (LCP), which must meet the standards of the CCA. Caltrans would coordinate with the Mendocino County Planning and Building Services and/or the California Coastal Commission to the project. Any permit conditions would be implemented, including any required compensatory mitigation. Additionally, an ESHA Assessment would be prepared to assess anticipated impacts to ESHA.

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PERSONAL COMMUNICATIONS

CDFW: Sarah Gallagher

USFWS: Steve Kramer, Greg Schmidt

APPENDIX A. Project Plans/Layouts

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	MEN	1	42.9/43.6		

SIG
REGISTERED CIVIL ENGINEER

SIGD
DATE

PLANS APPROVAL DATE

NAME
XXXXX
XX-XX-18
Exp.
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

DESIGN STUDY ONLY

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

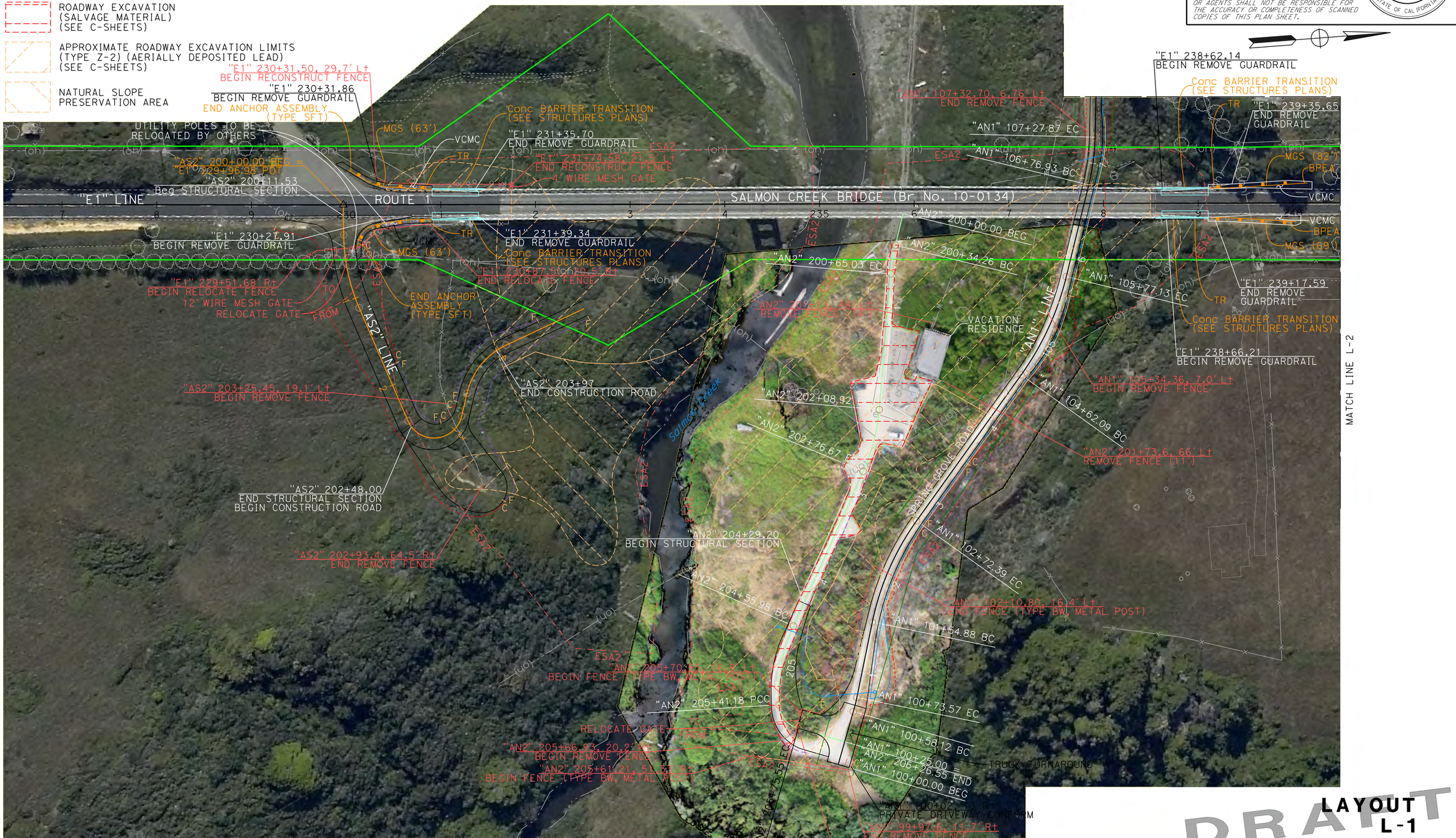
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND:

- ENVIRONMENTALLY SENSITIVE AREA BOUNDARY
- ROADWAY EXCAVATION (SALVAGE MATERIAL) (SEE C-SHEETS)
- APPROXIMATE ROADWAY EXCAVATION LIMITS (TYPE Z-2) (AERIALLY DEPOSITED LEAD) (SEE C-SHEETS)
- NATURAL SLOPE PRESERVATION AREA

ABBREVIATIONS:

BPEA	BURIED POST END ANCHOR
ESA1	ENVIRONMENTALLY SENSITIVE AREA AT 1 FOOT BELOW GRADE
ESA2	ENVIRONMENTALLY SENSITIVE AREA AT 2 FEET BELOW GRADE
TR	TRANSITION RAILING (TYPE WB-31)
VCMC	VEGETATION CONTROL (MINOR CONCRETE)



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LAYOUT L-1

SCALE: 1" = 50'

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2-16-23

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

COREY MATSON

FUNCTIONAL SUPERVISOR
BRIAN SIMON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0311

PROJECT NUMBER & PHASE 01200001110

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	MEN	1	42.9/43.6		

SIG
REGISTERED CIVIL ENGINEER

SIGD
DATE

PLANS APPROVAL DATE

DESIGN STUDY ONLY

REGISTERED PROFESSIONAL ENGINEER
NAME
XXXXX
Exp. XX-XX-18
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

"AN1" 113+53
END STRUCTURAL SECTION
BEGIN HMA OVERLAY (PHASE 1)
BEGIN HMA OVERLAY (PHASE 2)

"AN1" 111+97.83 EC
"AN1" 112+87.39 BC
"AN1" 113+60.28 EC
"AN1" 116+25.90 BC
"AN1" 116+65.51 EC
"AN1" 120+20, Lt
Beg HMA LEVELING
"AN1" 120+32.42 BC
"AN1" 120+41.49 EC
121+26.05 BC
121+54.41 EC
21+95.74 BC

"AN1" 110+60.08 BC
"AN1" 109+86.07 EC
SPRING GROVE ROAD
"AN1" LINE
"AN1" 119+04
END CPACP
AND OVERLAY
Co R/W

"AN1" 117+XX.XX, X.XX' Rt
END DITCH EXCAVATION

"AN1" 114+44
BEGIN CPACP
AND OVERLAY

"AN1" 116+66, Rt
PRIVATE DRIVEWAY CONFORM

"AN1" 119+92
Beg CPAC
AND OVERLAY

"AN1" 120+49, Rt
PRIVATE DRIVEWAY CONFORM

"AN1" 121+84, Lt
END CPAC AND OVERLAY

MATCH LINE L-1

MATCH LINE L-3

ROUTE 1
"E1" LINE
245
250

"E1" 248+95.09, XX.X' Rt
Beg BIOFILTRATION STRIP

REMOVE
OVERSIDE DRAIN

R/W

DRAFT

LAYOUT L-2

SCALE: 1" = 50'

REVISED BY	DATE REVISED
COREY MATSON	
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	
BRIAN SIMON	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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UNIT 0311

PROJECT NUMBER & PHASE 01200001110

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	MEN	1	42.9/43.6		

SIG
REGISTERED CIVIL ENGINEER

SIGD
DATE

NAME
No. XXXXX
Exp. XX-XX-18
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE

DESIGN STUDY ONLY

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

"AN1" 123+69
BEGIN CPACP
AND OVERLAY

"AN1" 123+18.15 PCC

"AN1" 124+36.06 PCC

"AN1" 125+67.23 EC

"AN1" 126+09
END CPACP AND OVERLAY

"AN1" 127+50.44 BC

"AN1" 128+58.13 EC

"AN1" 128+90, Rt
PRIVATE DRIVEWAY CONFORM

"AN1" 129+24.25 BC

"AN1" 129+70, Lt
Beg WIDENING, Lt

"AN1" 130+32.84 EC

"AN1" 131+21
CONFORM Exist
END CPACP AND OVERLAY
END OVERLAY (PHASE 1)
END OVERLAY (PHASE 2)

"AN1" 131+26.41 BC

"AN1" 131+34
END WIDENING, Lt

"AN1" 131+63.30 EC

"AN1" 131+88.19 END=
"E1" 258+16.58

258+72

"AN1" 122+98, Rt
END CPACP
AND OVERLAY

"AN1" 125+79, Rt
PRIVATE DRIVEWAY CONFORM

"AN1" 127+25
Beg CPACP AND OVERLAY

"AN1" 128+11
END CPACP AND OVERLAY

"AN1" LINE

SPRING GROVE ROAD

"AN1" 129+62
BEGIN WIDENING, Rt

"AN1" 130+85
BEGIN CPACP AND OVERLAY

"AN1" 131+19
END WIDENING, Rt

"E1" LINE

ROUTE 1

"E1" 258+25.34, XX.X' Rt
END BIOFILTRATION STRIP

REMOVE
OVERSIDE DRAIN

MATCH LINE L-2

R/W

LAYOUT
L-3

SCALE: 1" = 50'

DRAFT

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
COREY MATSON			

FUNCTIONAL SUPERVISOR: BRIAN SIMON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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UNIT 0311

PROJECT NUMBER & PHASE 01200001110

APPENDIX B. USFWS Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To:
Project Code: 2023-0025554
Project Name: 40141

December 14, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Project Code: 2023-0025554
Project Name: 40141
Project Type: Disposal - Beneficial Use
Project Description: Lead removal/Abatement
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.21777665,-123.7689139265884,14z

Counties: Mendocino County, California

Endangered Species Act Species

There is a total of 14 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Behren's Silverspot Butterfly *Speyeria zerene behrensii*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/900	
Lotis Blue Butterfly *Lycaeides argyrognomon lotis*	Endangered
There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/5174	

Flowering Plants

NAME	STATUS
Burke's Goldfields *Lasthenia burkei*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	
Contra Costa Goldfields *Lasthenia conjugens*	Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	
Showy Indian Clover *Trifolium amoenum*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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 Sep 30

NAME	BREEDING SEASON
Black Oystercatcher *Haematopus bachmani* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Scoter *Melanitta nigra* 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 elsewhere
Black Turnstone *Arenaria melanocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Black-legged Kittiwake *Rissa tridactyla* 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 elsewhere
Brown Pelican *Pelecanus occidentalis* 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 15 to Sep 30
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Loon *gavia immer* 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/4464	Breeds Apr 15 to Oct 31
Common Murre *Uria aalge* 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 Apr 15 to Aug 15
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10

NAME	BREEDING SEASON
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
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Red-breasted Merganser *Mergus serrator* 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 elsewhere
Red-necked Phalarope *Phalaropus lobatus* 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 elsewhere
Red-throated Loon *Gavia stellata* 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 elsewhere
Ring-billed Gull *Larus delawarensis* 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 elsewhere
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15

NAME	BREEDING SEASON
Surf Scoter *Melanitta perspicillata* 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 elsewhere
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
White-winged Scoter *Melanitta fusca* 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 elsewhere
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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.

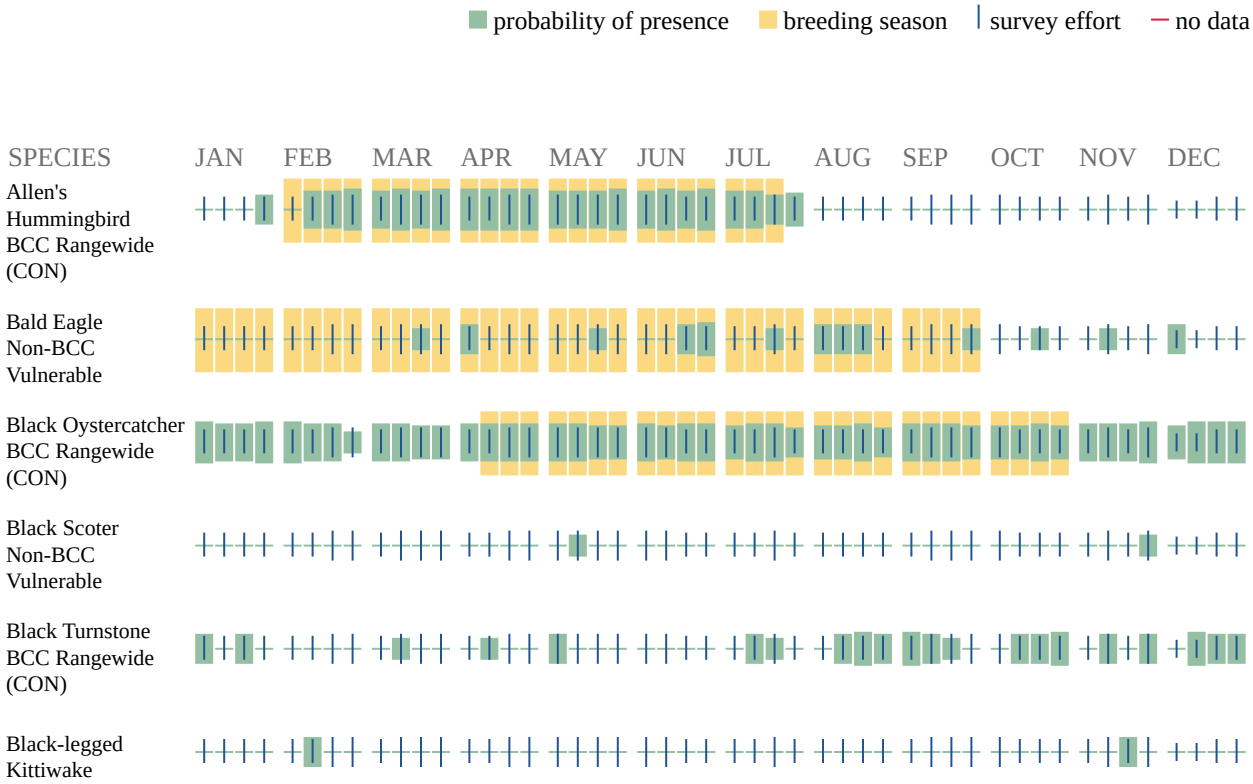
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

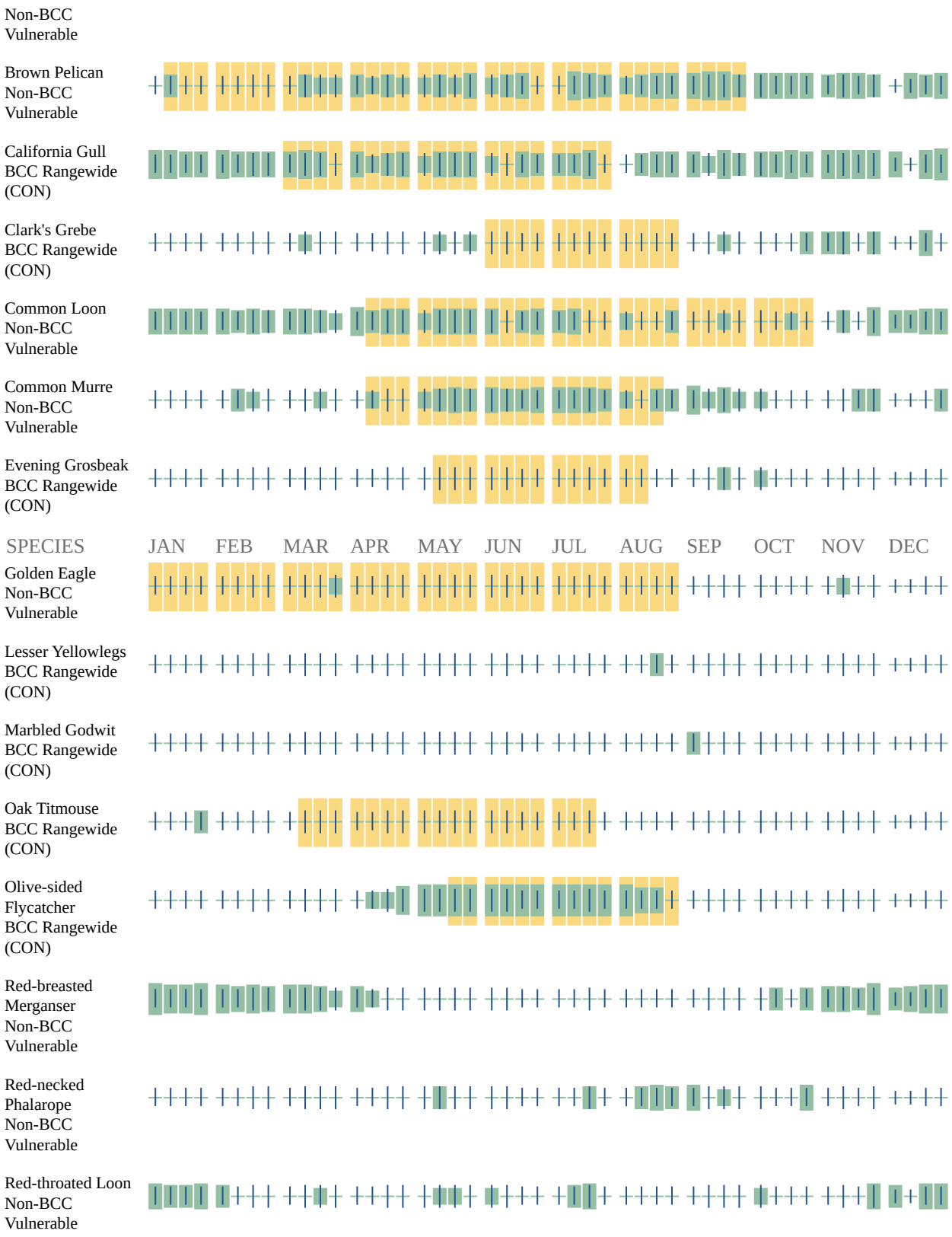
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

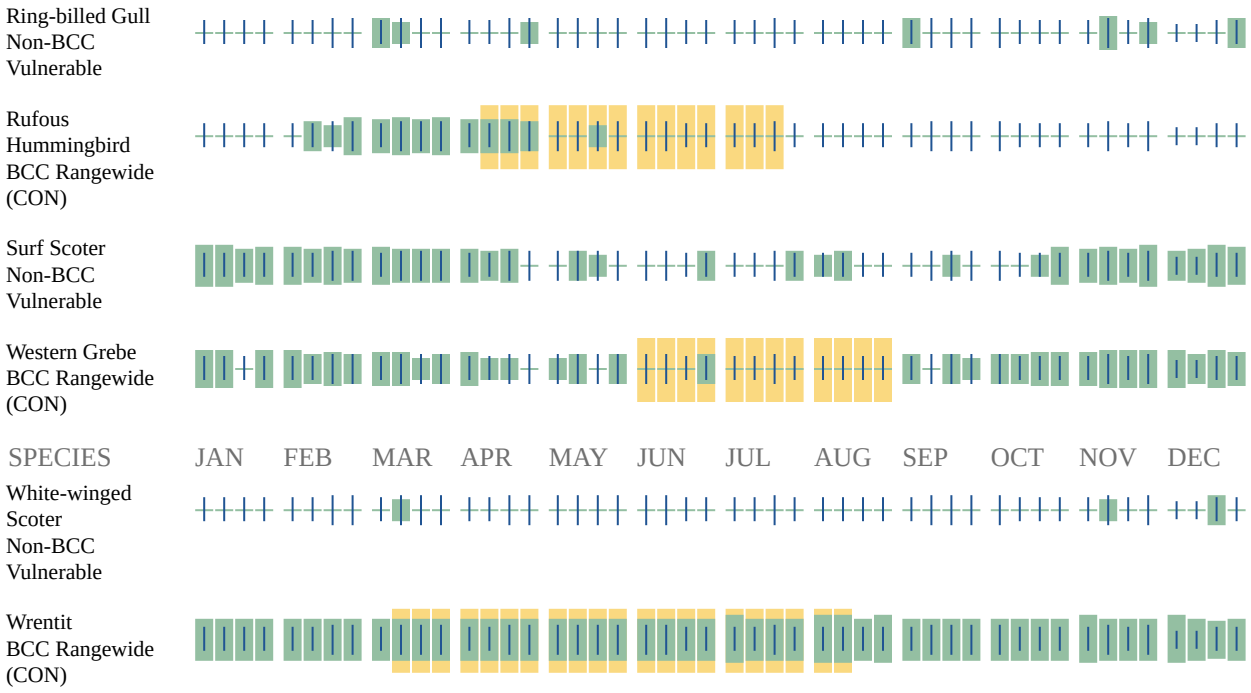
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.




Non-BCC Vulnerable
Brown Pelican Non-BCC Vulnerable
California Gull BCC Rangewide (CON)
Clark's Grebe BCC Rangewide (CON)
Common Loon Non-BCC Vulnerable
Common Murre Non-BCC Vulnerable
Evening Grosbeak BCC Rangewide (CON)
SPECIES
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Golden Eagle Non-BCC Vulnerable
Lesser Yellowlegs BCC Rangewide (CON)
Marbled Godwit BCC Rangewide (CON)
Oak Titmouse BCC Rangewide (CON)
Olive-sided Flycatcher BCC Rangewide (CON)
Red-breasted Merganser Non-BCC Vulnerable
Red-necked Phalarope Non-BCC Vulnerable
Red-throated Loon Non-BCC Vulnerable



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

Migratory Birds FAQ

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.

Wetlands

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R3UBH

FRESHWATER EMERGENT WETLAND

- PEM1B
- PEM1Ch
- PEM1A

ESTUARINE AND MARINE WETLAND

- M2USP
- E2EM1P
- E2USP

FRESHWATER POND

- PUBHh

ESTUARINE AND MARINE DEEPWATER

- E1UBL

IPaC User Contact Information

Agency: California Department of Transportation District 1
Name: Benjamin Lardiere
Address: 1656 Union Street
City: Eureka
State: CA
Zip: 95501
Email benjamin.lardiere@dot.ca.gov
Phone: 7078156361

APPENDIX C. NMFS Official Species List

From: Pohlman, Jeremy@DOT
To: nmfs.wcrca.specieslist@noaa.gov
Subject: Caltrans - 01 - 40141 - Salmon Creek Sandblast Waste Abatement
Date: Friday, October 22, 2021 2:25:00 PM

Quad Name **Albion**

Quad Number **39123-B7**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) - **X**

CC Chinook Salmon ESU (T) - **X**

CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) - **X**

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

CC Chinook Salmon Critical Habitat - **X**

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat - **X**

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat -

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - X

Olive Ridley Sea Turtle (T/E) - X

Leatherback Sea Turtle (E) - X

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) - X

Fin Whale (E) - X

Humpback Whale (E) - X

Southern Resident Killer Whale (E) - X

North Pacific Right Whale (E) - X

Sei Whale (E) - X

Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X

Chinook Salmon EFH - X

Groundfish EFH - X

Coastal Pelagics EFH - X

Highly Migratory Species EFH - X

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - X

MMPA Pinnipeds - X

Jeremy Pohlman
Associate Environmental Planner, Natural Sciences
Caltrans, North Region Environmental
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APPENDIX D. CDFW/CNDDB Official Species List

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Albion (3912327) OR Elk (3912326) OR Mendocino (3912337) OR Mathison Peak (3912336) OR Mallo Pass Creek (3912316))

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.
Abronia umbellata var. breviflora pink sand-verbena	G4G5T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	40 40	61 S:2	0	0	0	0	0	2	1	1	2	0	0
Agrostis blasdalei Blasdale's bent grass	G2G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	150 200	62 S:6	0	0	1	1	0	4	6	0	6	0	0
Aplodontia rufa nigra Point Arena mountain beaver	G5T1 S1	Endangered None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	50 700	39 S:14	1	4	0	0	0	9	7	7	14	0	0
Arborimus pomo Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	75 1,200	222 S:24	1	1	0	0	0	22	23	1	24	0	0
Arctostaphylos nummularia ssp. mendocinoensis pygmy manzanita	G3?T1 S1	None None	Rare Plant Rank - 1B.2 SB_UCSC-UC Santa Cruz	300 600	7 S:5	0	0	0	0	0	5	2	3	5	0	0
Ascaphus truei Pacific tailed frog	G4 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	20 700	491 S:25	0	5	0	0	0	20	4	21	25	0	0
Astragalus agnicidus Humboldt County milk-vetch	G2 S2	None Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,015 1,015	69 S:1	0	1	0	0	0	0	0	1	1	0	0
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	15 150	181 S:2	0	0	0	0	0	2	2	0	2	0	0
Bombus occidentalis western bumble bee	G3 S1	None Candidate Endangered	IUCN_VU-Vulnerable USFS_S-Sensitive	100 100	306 S:1	0	0	0	0	0	1	1	0	1	0	0

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California Department of Fish and Wildlife

California Natural Diversity Database

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.
Brachyramphus marmoratus marbled murrelet	G3 S2	Threatened Endangered	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	300 400	110 S:2	0	0	0	0	0	2	2	0	2	0	0
Calamagrostis crassiglumis Thurber's reed grass	G3Q S2	None None	Rare Plant Rank - 2B.1	150 150	15 S:1	0	0	0	0	0	1	1	0	1	0	0
Calileptoneta wapiti Mendocino leptonetid spider	G1 S1	None None		150 1,200	2 S:2	0	0	0	0	0	2	2	0	2	0	0
Calystegia purpurata ssp. saxicola coastal bluff morning-glory	G4T2T3 S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	50 245	42 S:4	0	2	0	0	0	2	1	3	4	0	0
Campanula californica swamp harebell	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	80 1,700	155 S:22	2	10	3	2	0	5	13	9	22	0	0
Carex californica California sedge	G5 S2	None None	Rare Plant Rank - 2B.2	260 640	41 S:22	0	0	1	0	0	21	1	21	22	0	0
Carex livida livid sedge	G5 SH	None None	Rare Plant Rank - 2A	400 400	1 S:1	0	0	0	0	1	0	1	0	0	1	0
Carex lyngbyei Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	4 24	37 S:2	2	0	0	0	0	0	0	2	2	0	0
Carex saliniformis deceiving sedge	G2 S2	None None	Rare Plant Rank - 1B.2	150 160	18 S:3	0	0	0	0	0	3	3	0	3	0	0
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	10 15	31 S:2	1	1	0	0	0	0	0	2	2	0	0
Castilleja litoralis Oregon coast paintbrush	G3 S3	None None	Rare Plant Rank - 2B.2	22 50	44 S:3	0	1	0	0	0	2	2	1	3	0	0
Castilleja mendocinensis Mendocino Coast paintbrush	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	40 290	52 S:22	0	9	0	0	0	13	10	12	22	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

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.
Chorizanthe howellii Howell's spineflower	G1 S1	Endangered Threatened	Rare Plant Rank - 1B.2		9 S:1	0	0	0	0	0	1	1	0	1	0	0
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	G3 S2.1	None None			60 S:2	0	0	0	0	0	2	2	0	2	0	0
Coastal Brackish Marsh Coastal Brackish Marsh	G2 S2.1	None None			30 S:1	0	0	0	0	0	1	1	0	1	0	0
Coptis laciniata Oregon goldthread	G4? S3?	None None	Rare Plant Rank - 4.2	40 320	122 S:15	2	8	2	0	0	3	0	15	15	0	0
Cornus unalaschkensis bunchberry	G5 S2	None None	Rare Plant Rank - 2B.2	300 300	11 S:1	0	0	0	0	0	1	0	1	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	38 178	635 S:3	0	0	2	0	0	1	1	2	3	0	0
Cuscuta pacifica var. papillata Mendocino dodder	G5T1 S1	None None	Rare Plant Rank - 1B.2		5 S:1	0	0	0	0	0	1	1	0	1	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	520 520	184 S:1	0	1	0	0	0	0	0	1	1	0	0
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	783 783	523 S:1	0	0	0	0	0	1	0	1	1	0	0
Erigeron supplex supple daisy	G2 S2	None None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley	85 150	21 S:4	0	2	0	0	0	2	4	0	4	0	0
Erysimum concinnum bluff wallflower	G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	50 150	30 S:7	0	0	0	0	0	7	5	2	7	0	0
Fratercula cirrhata tufted puffin	G5 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern		17 S:2	0	0	0	0	0	2	2	0	2	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Gilia capitata ssp. pacifica Pacific gilia	G5T3 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	4 100	91 S:4	0	1	0	0	0	3	2	2	4	0	0
Gilia millefoliata dark-eyed gilia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		54 S:1	0	0	0	0	0	1	1	0	1	0	0
Grand Fir Forest Grand Fir Forest	G1 S1.1	None None		160 700	9 S:8	0	3	5	0	0	0	8	0	8	0	0
Helminthoglypta arrosa pomoensis Pomo bronze shoulderband	G2G3T1 S1	None None	IUCN_DD-Data Deficient		3 S:1	0	0	0	0	0	1	1	0	1	0	0
Hesperevax sparsiflora var. brevifolia short-leaved evax	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	45 360	72 S:9	0	2	2	0	0	5	2	7	9	0	0
Hesperocyparis pygmaea pygmy cypress	G1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	70 985	37 S:18	1	3	5	1	0	8	2	16	18	0	0
Hesperoleucus venustus navarroensis northern coastal roach	GNRT3 S3	None None	CDFW_SSC-Species of Special Concern	1 1	4 S:1	0	1	0	0	0	0	1	0	1	0	0
Hydrobates homochroa ashy storm-petrel	G2 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	128 128	21 S:1	0	0	0	0	0	1	1	0	1	0	0
Juncus supiniformis hair-leaved rush	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	270 400	6 S:3	0	0	0	0	0	3	1	2	3	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Kopsiopsis hookeri small groundcone	G4? S1S2	None None	Rare Plant Rank - 2B.3	540 540	21 S:1	0	1	0	0	0	0	1	0	1	0	0
Lasthenia californica ssp. bakeri Baker's goldfields	G3T1 S1	None None	Rare Plant Rank - 1B.2	20 200	19 S:3	0	0	0	0	0	3	2	1	3	0	0
Lasthenia californica ssp. macrantha perennial goldfields	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	20 150	59 S:8	1	1	0	0	0	6	5	3	8	0	0
Lathyrus palustris marsh pea	G5 S2	None None	Rare Plant Rank - 2B.2		13 S:1	0	0	0	0	0	1	1	0	1	0	0
Lilium maritimum coast lily	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_BerrySB-Berry Seed Bank SB_UCBG-UC Botanical Garden at Berkeley	150 1,223	84 S:19	0	6	5	3	0	5	8	11	19	0	0
Mendocino Pygmy Cypress Forest Mendocino Pygmy Cypress Forest	G2 S2.1	None None		240 600	25 S:18	1	2	1	1	1	12	18	0	17	0	1
Microseris borealis northern microseris	G5 S1	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	150 150	3 S:1	0	0	0	0	1	0	1	0	0	1	0
Mitellastra caulescens leafy-stemmed mitrewort	G5 S4	None None	Rare Plant Rank - 4.2	20 200	21 S:3	0	0	0	1	0	2	3	0	3	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None			53 S:2	0	0	0	0	0	2	2	0	2	0	0
Packera bolanderi var. bolanderi seacoast ragwort	G4T4 S2S3	None None	Rare Plant Rank - 2B.2		72 S:5	0	0	0	0	0	5	3	2	5	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	20 20	504 S:2	0	0	0	0	0	2	2	0	2	0	0
Phacelia insularis var. continentis North Coast phacelia	G2T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley		15 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.
Pinus contorta ssp. bolanderi Bolander's beach pine	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCSC-UC Santa Cruz	240 600	28 S:22	3	4	2	2	1	10	22	0	21	1	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	275 675	222 S:2	0	0	1	1	0	0	0	2	2	0	0
Plebejus anna lotis lotis blue butterfly	G4TH SH	Endangered None		240 240	2 S:1	0	0	0	0	1	0	1	0	0	1	0
Progne subis purple martin	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	0 0	71 S:2	0	1	1	0	0	0	1	1	2	0	0
Ramalina thrausta angel's hair lichen	G5? S2S3	None None	Rare Plant Rank - 2B.1	40 590	21 S:2	0	0	0	0	0	2	1	1	2	0	0
Rana aurora northern red-legged frog	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	10 1,000	292 S:25	0	7	2	0	0	16	10	15	25	0	0
Rana boylii pop. 1 foothill yellow-legged frog - north coast DPS	G3TNRQ S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	15 512	1606 S:15	0	0	0	0	0	15	12	3	15	0	0
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	250 300	1682 S:4	0	0	0	0	0	4	4	0	4	0	0
Rhyacotriton variegatus southern torrent salamander	G3G4 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	50 500	416 S:13	4	1	1	0	0	7	6	7	13	0	0
Rhynchospora alba white beaked-rush	G5 S2	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	542 542	17 S:1	0	0	0	0	0	1	0	1	1	0	0
Sanguisorba officinalis great burnet	G5? S2	None None	Rare Plant Rank - 2B.2	200 200	22 S:2	0	0	0	0	1	1	2	0	1	1	0
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2	100 200	34 S:5	0	2	1	0	0	2	3	2	5	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Sidalcea malachroides maple-leaved checkerbloom	G3 S3	None None	Rare Plant Rank - 4.2	80 600	136 S:4	0	0	1	1	0	2	4	0	4	0	0
Sidalcea malviflora ssp. patula Siskiyou checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCSC-UC Santa Cruz		60 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom	G5T1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	280 280	19 S:1	0	1	0	0	0	0	0	1	1	0	0
Speyeria zerene behrensii Behren's silverspot butterfly	G5T1 S1	Endangered None		150 300	12 S:2	0	0	0	0	2	0	2	0	0	2	0
Sphagnum Bog Sphagnum Bog	G3 S1.2	None None		240 540	12 S:4	0	0	0	0	0	4	4	0	4	0	0
Streptanthus glandulosus ssp. hoffmanii Hoffman's bristly jewelflower	G4T2 S2	None None	Rare Plant Rank - 1B.3 SB_UCSC-UC Santa Cruz	1,685 1,783	16 S:2	0	1	1	0	0	0	0	2	2	0	0
Taricha rivularis red-bellied newt	G2 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	50 1,400	136 S:4	0	0	0	0	0	4	4	0	4	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	225 225	64 S:1	1	0	0	0	0	0	0	1	1	0	0
Trifolium trichocalyx Monterey clover	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	670 670	6 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	160 1,200	206 S:7	0	3	3	1	0	0	6	1	7	0	0

APPENDIX E. CNPS Species List

California Native Plant Society

Search Results

59 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3912327:3912337:3912336:3912326:3912316**]

▲ SCIENTIFIC NAME	COMMON NAME	LIFEFORM	FED LIST	STATE LIST	STATE RANK	CA RARE PLANT RANK
Abronia umbellata var. *breviflora*	pink sand-verbena	annual herb	None	None	S2	1B.1
Agrostis blasdalei	Blasdale's bent grass	perennial rhizomatous herb	None	None	S2	1B.2
Angelica lucida	sea-watch	perennial herb	None	None	S3	4.2
Arctostaphylos nummularia ssp. *mendocinoensis*	pygmy manzanita	perennial evergreen shrub	None	None	S1	1B.2
Astragalus agnicidus	Humboldt County milk-vetch	perennial herb	None	CE	S2	1B.1
Calamagrostis bolanderi	Bolander's reed grass	perennial rhizomatous herb	None	None	S4	4.2
Calamagrostis crassiglumis	Thurber's reed grass	perennial rhizomatous herb	None	None	S2	2B.1
Calystegia purpurata ssp. *saxicola*	coastal bluff morning-glory	perennial herb	None	None	S2S3	1B.2
Campanula californica	swamp harebell	perennial rhizomatous herb	None	None	S3	1B.2
Carex californica	California sedge	perennial rhizomatous herb	None	None	S2	2B.2
Carex livida	livid sedge	perennial rhizomatous herb	None	None	SH	2A
Carex lyngbyei	Lyngbye's sedge	perennial rhizomatous herb	None	None	S3	2B.2
Carex saliniformis	deceiving sedge	perennial rhizomatous herb	None	None	S2	1B.2
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	annual herb (hemiparasitic)	None	None	S2	1B.2
Castilleja litoralis	Oregon coast paintbrush	perennial herb (hemiparasitic)	None	None	S3	2B.2
Castilleja mendocinensis	Mendocino Coast paintbrush	perennial herb (hemiparasitic)	None	None	S2	1B.2
Ceanothus gloriosus var. *exaltatus*	glory brush	perennial evergreen shrub	None	None	S4	4.3
Ceanothus gloriosus var. *gloriosus*	Point Reyes ceanothus	perennial evergreen shrub	None	None	S4	4.3
Chorizanthe howellii	Howell's spineflower	annual herb	FE	CT	S1	1B.2
Chrysosplenium glechomifolium	Pacific golden saxifrage	perennial herb	None	None	S3	4.3
Coptis laciniata	Oregon goldthread	perennial rhizomatous herb	None	None	S3?	4.2
Cornus unalaschkensis	bunchberry	perennial rhizomatous herb	None	None	S2	2B.2
Cuscuta pacifica var. *papillata*	Mendocino dodder	annual vine (parasitic)	None	None	S1	1B.2
Darlingtonia californica	California pitcherplant	perennial rhizomatous herb (carnivorous)	None	None	S4	4.2
Erigeron supplex	supple daisy	perennial herb	None	None	S2	1B.2
Erysimum concinnum	bluff wallflower	annual/perennial herb	None	None	S2	1B.2
Gilia capitata ssp. *pacifica*	Pacific gilia	annual herb	None	None	S2	1B.2
Gilia millefoliata	dark-eyed gilia	annual herb	None	None	S2	1B.2

Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	annual herb	None	None	S3	1B.2
Hesperocyparis macrocarpa	Monterey cypress	perennial evergreen tree	None	None	S1	1B.2
Hesperocyparis pygmaea	pygmy cypress	perennial evergreen tree	None	None	S1	1B.2
Hosackia gracilis	harlequin lotus	perennial rhizomatous herb	None	None	S3	4.2
Juncus supiniformis	hair-leaved rush	perennial rhizomatous herb	None	None	S1	2B.2
Kopsiopsis hookeri	small groundcone	perennial rhizomatous herb (parasitic)	None	None	S1S2	2B.3
Lasthenia californica ssp. *bakeri*	Baker's goldfields	perennial herb	None	None	S1	1B.2
Lasthenia californica ssp. *macrantha*	perennial goldfields	perennial herb	None	None	S2	1B.2
Lathyrus palustris	marsh pea	perennial herb	None	None	S2	2B.2
Lilium maritimum	coast lily	perennial bulbiferous herb	None	None	S2	1B.1
Lycopodium clavatum	running-pine	perennial rhizomatous herb	None	None	S3	4.1
Microseris borealis	northern microseris	perennial herb	None	None	S1	2B.1
Mitellastra caulescens	leafy-stemmed mitrewort	perennial rhizomatous herb	None	None	S4	4.2
Packera bolanderi var. *bolanderi*	seacoast ragwort	perennial rhizomatous herb	None	None	S2S3	2B.2
Phacelia insularis var. *continentis*	North Coast phacelia	annual herb	None	None	S2	1B.2
Pinus contorta ssp. *bolanderi*	Bolander's beach pine	perennial evergreen tree	None	None	S2	1B.2
Piperia candida	white-flowered rein orchid	perennial herb	None	None	S3	1B.2
Pityopus californicus	California pinefoot	perennial herb (achlorophyllous)	None	None	S4	4.2
Pleuropogon refractus	nodding semaphore grass	perennial rhizomatous herb	None	None	S4	4.2
Ramalina thrausta	angel's hair lichen	fruticose lichen (epiphytic)	None	None	S2S3	2B.1
Rhynchospora alba	white beaked-rush	perennial rhizomatous herb	None	None	S2	2B.2
Sanguisorba officinalis	great burnet	perennial rhizomatous herb	None	None	S2	2B.2
Sidalcea calycosa ssp. *rhizomata*	Point Reyes checkerbloom	perennial rhizomatous herb	None	None	S2	1B.2
Sidalcea malachroides	maple-leaved checkerbloom	perennial herb	None	None	S3	4.2
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	perennial rhizomatous herb	None	None	S2	1B.2
Sidalcea malviflora ssp. *purpurea*	purple-stemmed checkerbloom	perennial rhizomatous herb	None	None	S1	1B.2
Streptanthus glandulosus ssp. *hoffmanii*	Hoffman's bristly jewelflower	annual herb	None	None	S2	1B.3
Trifolium buckwestiorum	Santa Cruz clover	annual herb	None	None	S2	1B.1
Trifolium trichocalyx	Monterey clover	annual herb	FE	CE	S1	1B.1
Usnea longissima	Methuselah's beard lichen	fruticose lichen (epiphytic)	None	None	S4	4.2
Veratrum fimbriatum	fringed false-hellebore	perennial herb	None	None	S3	4.3

Showing 1 to 59 of 59 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 15 December 2022].

APPENDIX F. Botanical Inventory

Plant Species Observed within BSA #1

Scientific Name	Common Name
Abies grandis	grand fir
Achillea millefolium	common yarrow
Agrostis capillaris	colonial bentgrass
Agrostis stolonifera	creeping bentgrass
Aira caryophyllea	silver European hairgrass
Allium triquetrum	escaped ornamental onion
Alnus rubra	red alder
Ambrosia chamissonis	beach bursage
Amelanchier alnifolia var. *semiintegrifolia*	western serviceberry
Anagallis arvensis	scarlet pimpernel
Anaphalis margaritacea	pearly everlasting
Angelica hendersonii	Henderson's angelica
Anthoxanthum odoratum	sweet vernal grass
Anthriscus caucalis	bur-chervil
Aquilegia formosa	crimson columbine
Arbutus menziesii	Pacific madrone
Arctotheca prostrata	African daisy
Artemisia douglasiana	mugwort
Artemisia pycnocephala	coastal sagewort
Athyrium filix-femina var. *cyclosorum*	lady fern
Avena barbata	slender wild oat
Avena fatua	wild oat grass
Baccharis douglasii	marsh baccharis
Baccharis pilularis	coyote brush
Bellis perennis	English daisy
Brassica nigra	black mustard
Brassica rapa	field mustard
Briza maxima	large quaking or rattlesnake grass
Briza minor	small quaking or rattlesnake grass
Bromus carinatus	California brome
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess
Calamagrostis nutkaensis	Pacific reed grass
Calystegia purpurata ssp. purpurata	Smooth western morning glory
Campanula californica	swamp harebell
Cardamine californica	California toothwort or milk maids
Cardamine oligosperma	western bittercress
Carduus pycnocephalus	Italian thistle
Carex densa	dense sedge
Carex gynodynama	Olney's hairy sedge
Carex obnupta	slough sedge

Scientific Name	Common Name
Carex subbracteata	smallbract sedge
Carex unilateralis	lateral sedge
Carpobrotus edulis	ice plant
Castilleja affinis ssp. *affinis*	coast paintbrush
Castilleja affinis ssp. *littoralis*	Oregon Coast paintbrush
Castilleja wightii	Wight's paintbrush
Ceanothus thyrsiflorus var. *griseus*	blue blossom
Cerastium arvense	field chickweed
Cerastium fontanum var. *vulgare*	large mouse-ear chickweed
Cerastium glomeratum	mouse-ear chickweed
Cirsium arvense	Canada thistle
Cirsium vulgare	bull thistle
Cistus incanus	rock rose
Clarkia amoena ssp. amoena	farewell-to-spring
Claytonia perfoliata	miner's lettuce
Coleonema pulchellum	breath of heaven
Conium maculatum	poison hemlock
Convolvulus arvensis	field bindweed
Conyza canadensis	horseweed
Conyza floribunda	asthmaweed
Cortaderia jubata	weedy pampas grass
Corylus cornuta var. *californica*	California hazelnut
Cotoneaster lacteus	Parney cotoneaster
Cotoneaster pannosa	silverleaf cotoneaster
Crassula tillaea	crassula
Cryptomeria japonica	Japanese cedar
Cynodon dactylon	Bermudagrass
Cynosurus echinatus	hedgehog dogtail grass
Cyperus eragrostis	nut-grass or tall flat-sedge
Cyperus erythrorhizos	red root flat-sedge
Cytisus scoparius	Scotch broom
Dactylis glomerata	orchard grass
Danthonia californica	California oatgrass
Danthonia pilosa	purple awned wallaby grass
Daucus carota	wild carrot or Queen Anne's lace
Delairea odorata	Cape ivy
Delphinium nudicaule	canyon larkspur
Deschampsia cespitosa ssp. *holciformis*	California hairgrass
Deschampsia elongata	slender hairgrass
Dichelostemma capitatum	blue dicks
Digitalis purpurea	foxglove
Digitaria sanguinalis	crab grass
Diplacus aurantiacus	sticky monkeyflower
Dipsacus fullonum	wild teasel
Distichlis spicata	saltgrass
Dryopteris arguta	coastal wood fern
Dudleya farinosa	powdery dudleya or bluff-lettuce
Eleocharis macrostachya	common spike-rush

Scientific Name	Common Name
Eleocharis sp.	spike-rush
Elymus glaucus	blue wildrye
Elymus pacificus	Gould's ryegrass
Epilobium ciliatum ssp. *watsonii*	fringed willow herb
Equisetum arvense	common horsetail
Equisetum telmateia ssp. *braunii*	giant horsetail
Erigeron glaucus	seaside daisy
Eriogonum latifolium	beach buckwheat
Eriophyllum lanatum var. *arachnoideum*	spiderweb woolly sunflower
Eriophyllum staechadifolium	lizard tail or seaside woolly sunflower
Erodium botrys	long-beaked storksbill
Erodium cicutarium	redstem filaree
Eryngium armatum	coastal eryngo
Erythranthe guttata	seep-spring monkeyflower
Eschscholzia californica	California poppy
Eucalyptus globulus	blue gum
Euphorbia sp.	spurge
Festuca arundinacea	tall fescue
Festuca bromoides	brome fescue
Festuca myuros	rat's-tail fescue
Festuca occidentalis	western fescue
Festuca rubra	red fescue
Foeniculum vulgare	fennel
Fragaria chiloensis	beach strawberry
Fragaria vesca	wood strawberry
Frangula californica	California coffeeberry
Frangula purshiana	cascara
Fuchsia magellanica	hardy fuchsia
Fumaria capreolata	white ramping fumitory
Galium aparine	goose grass
Galium parisiense	wall bedstraw
Galium sp.	bedstraw
Garrya elliptica	silk tassel
Gaultheria shallon	salal
Geranium dissectum	cut-leaved geranium
Geranium molle	dovefoot geranium
Geranium robertianum	Robert's geranium
Gilia capitata ssp. *pacifica*	Pacific gilia
Gnaphalium luteo-album	weedy cudweed
Grevillea lanigera	woolly grevillea
Hedera helix	English ivy
Helenium puberulum	sneezeweed
Heracleum lanatum	cow parsnip
Hesperocyparis macrocarpa	Monterey cypress
Heuchera micrantha	small-flowered alumroot
Hirschfeldia incana	shortpod mustard
Holcus lanatus	common velvet grass
Hordeum brachyantherum	Meadow barley
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley

Scientific Name	Common Name
Horkelia californica ssp. *californica*	California horkelia
Hosackia gracilis (Lotus formosissimus)	bicolored or Harlequin lotus
Hypochaeris radicata	hairy cat's-ear
Ilex aquifolium	English holly
Ilex sp.	holly
Iris douglasiana	Douglas iris
Juncus articulatus	jointed rush
Juncus bolanderi	Bolander's rush
Juncus bufonius	common toad rush
Juncus capitatus	leafybract dwarf rush
Juncus effusus	common rush
Juncus patens	spreading rush
Juncus tenuis	slender rush
Juncus xiphioides	creeping rush
Kniphofia uvaria	red hot poker
Lathyrus latifolius	everlasting pea
Lathyrus sp.	pea
Lathyrus tingitanus	Tangier pea
Lathyrus vestitus var. vestitus	wood pea
Lavandula angustifolia	lavender
Leontodon taraxacoides	lesser hawkbit
Leptospermum sp.	tea tree
Leucanthemum vulgare	ox-eye daisy
Ligustrum lucidum	privet
Linum bienne	western blue flax
Lithodora diffusa	blue lithodora
Lobularia maritima	sweet alyssum
Lonicera hispidula var. *vacillans*	pink honeysuckle
Lonicera involucrata var. *ledebourii*	twinberry
Lotus angustissimus	annual bird's foot trefoil
Lotus corniculatus	bird's foot trefoil
Lotus micranthus	small-flowered lotus
Lupinus arboreus	yellow bush lupine
Lupinus bicolor	miniature lupine
Lupinus littoralis	seashore lupine
Lupinus rivularis	riverbank lupine
Lupinus variicolor	Lindley's varied lupine
Luzula comosa	common wood rush
Lythrum hyssopifolium	hyssop loosestrife
Madia glomerata	mountain tarweed
Madia sativa	coast tarweed
Maianthemum dilatatum	lily-of-the-valley
Marah fabaceus	California man-root
Marah oreganus	coast manroot
Matricaria discoidea	pineapple weed
Medicago arabica	spotted bur clover
Medicago polymorpha	bur clover
Melilotus alba	white sweetclover
Melilotus indicus	sweetclover

Scientific Name	Common Name
Melilotus officinalis	yellow sweetclover
Mentha pulegium	pennyroyal
Mentha sp.	field mint
Mitellastra caulescens	leafy-stemmed miterwort
Montia fontana	water montia
Morella californica	wax myrtle
Muhlenbergia filiformis	pull-up muhly
Myosotis discolor	yellow and blue scorpion grass
Narcissus sp.	domestic daffodil
Oenanthe sarmentosa	Pacific water-parsley
Osmorhiza berteroi	sweet-cicely
Oxalis oregana	redwood sorrel
Oxalis pilosa	hairy wood sorrel
Parentucellia viscosa	yellow parentucellia
Pellaea mucronata var. *mucronata*	bird's-foot cliff-brake
Pentagramma triangularis ssp. *triangularis*	goldback fern
Phacelia distans	distant phacelia
Phacelia nemoralis ssp. *oregonensis*	Oregon phacelia
Phalaris aquatica	Harding grass
Phormium sp.	New Zealand flax
Physocarpus capitatus	Pacific ninebark
Picea sitchensis	Sitka spruce
Pinus contorta ssp. *contorta*	beach pine
Pinus muricata	Bishop pine
Pinus radiata	Monterey pine
Plantago coronopus	cut-leaf plantain or buckhorn plantain
Plantago lanceolata	English plantain
Plantago major	common plantain
Plantago maritima	maritime plantain
Plectritis sp.	sea blush
Poa annua	annual bluegrass
Poa pratensis	Kentucky bluegrass
Polypodium glycyrrhiza	licorice fern
Polypodium scouleri	leather-leaf fern
Polypogon monspeliensis	rabbitfoot grass or annual beard grass
Polystichum munitum	sword fern
Potentilla anserina ssp. pacifica	Pacific silverweed
Prunella vulgaris	self-heal
Prunus sp.	plum
Pseudotsuga menziesii var. *menziesii*	Douglas-fir
Pteridium aquilinum var. *pubescens*	western bracken fern
Ranunculus californicus var. cuneatus	California buttercup
Ranunculus occidentalis	western buttercup
Ranunculus repens	creeping buttercup
Raphanus raphanistrum	wild radish
Raphanus sativus	wild radish
Ribes sanguineum	red-flowering currant
Rorippa nasturtium-aquaticum	water cress
Rosa nutkana var. *nutkana*	Nootka rose

Scientific Name	Common Name
Rosa sp.	rose-cultivar
Rosmarinus officinalis	rosemary
Rubus armeniacus	Himalayan blackberry
Rubus parviflorus	thimbleberry
Rubus ursinus	California blackberry
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Rumex salicifolius	willow dock
Sagina sp.	pearlwort
Salix hookeriana	coastal dune willow
Salix lasiandra	Pacific willow
Salix lasiolepis	arroyo willow
Salix sitchensis	Sitka willow
Sambucus racemosa var. *racemosa*	red elderberry
Sanicula crassicaulis	Pacific snakeroot
Satureja douglasii	yerba buena
Scandix pectin-veneris	Venus' needle
Schoenoplectus pungens	common threesquare
Scirpus acutus var. *occidentalis*	hardstem bulrush
Scirpus microcarpus	small-flowered bulrush
Scrophularia californica	California bee plant
Sedum spathulifolium	Pacific sedum
Senecio glomeratus	cutleaf burnweed
Senecio sylvaticus	wood groundsel
Senecio vulgaris	common butterweed
Sherardia arvensis	field madder
Sidalcea calycosa ssp. *rhizomata*	Point Reyes checkerbloom
Silene californica	Indian pink
Silene gallica	windmill pink or common catchfly
Silybum marianum	milk thistle
Sisyrinchium bellum	blue-eyed-grass
Sisyrinchium californicum	golden-blue-eyed-grass
Smilacina racemosa	branched Solomon's seal
Smilacina stellata	star Solomon's seal
Solanum americanum	small-flowered nightshade
Soliva sessilis	field burrweed
Sonchus asper ssp. *asper*	prickly sow thistle
Spergula arvensis ssp. *arvensis*	stickwort
Spergularia rubra	purple sandspurry
Stachys ajugoides	hedge nettle
Stachys chamissonis	Chamisso's hedge nettle
Stachys mexicana	Mexican hedge nettle
Stachys sp.	hedge-nettle
Stellaria media	common chickweed
Stellaria nitens	shining starwort
Stellaria sp.	chickweed
Symphyotrichum subspicatum	Douglas aster
Tellima grandiflora	fringe cups
Toxicodendron diversilobum	poison oak

Scientific Name	Common Name
Trifolium angustifolium	narrow leaved clover
Trifolium barbigerum	bearded clover
Trifolium campestre	hop clover
Trifolium dubium	little hop clover or shamrock clover
Trifolium glomeratum	clustered clover
Trifolium incarnatum	crimson clover
Trifolium repens	white clover
Trifolium subterraneum	subterranean clover
Trifolium tomentosum	woolly clover
Trifolium wormskioldii	springbank clover
Triteleia laxa	Ithuriel's spear or Wally basket
Tropaeolum majus	garden nasturtium
Ulex europaea	gorse
Umbellularia californica	California-bay
Urtica dioica ssp. *holosericea*	stinging nettle
Vaccinium ovatum	evergreen huckleberry
Veratrum fimbriatum	false hellebore
Veronica americana	American brooklime
Veronica scutellata	marsh speedwell
Vicia benghalensis	purple vetch
Vicia gigantea	giant vetch
Vicia hirsuta	hairy vetch
Vicia lutea	yellow vetch
Vicia sativa ssp. *nigra*	narrow-leaved vetch
Vicia sativa ssp. *sativa*	common vetch or spring vetch
Vicia villosa	winter vetch
Vinca major	greater periwinkle
Viola adunca	western dog violet
Watsonia meriana	bulbil bugle-lily
Woodwardia fimbriata	giant chain fern
Zantedeschia aethiopica	calla lily

Note: List is cumulative observations of Caltrans botanists in 2013 and 2014 and ICF botanists in 2017 and 2020.

APPENDIX G. Bird Species Observed

Common Name	*Scientific Name*
Allen's hummingbird	*Selasphorus sasin*
American goldfinch	*Spinus tristis*
American robin	*Turdus migratorius*
Bald eagle	*Haliaeetus leucocephalus*
Barn swallow	*Hirundo rustica*
Bewick's wren	*Thryomanes bewickii*
Black oystercatcher	*Haematopus bachmani*
Black phoebe	*Sayornis nigricans*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown creeper	*Certhia americana*
Brown headed cowbird	*Molothrus ater*
Bushtit	*Psaltriparus minimus*
California quail	*Callipepla californica*
Canada goose	*Branta canadensis*
Chestnut backed chickadee	*Poecile rufescens*
Cliff swallow	*Petrochelidon pyrrhonota*
Common raven	*Corvus corax*
Common yellowthroat	*Geothlypis trichas*
Double crested cormorant	*Phalacrocorax auritus*
gull	*Family Laridae*
House finch	*Haemorhous mexicanus*
Hutton's vireo	*Vireo huttoni*
Killdeer	*Charadrius vociferus*
Mallard	*Anas platyrhynchos*
Merlin	*Falco columbarius*
Northern pygmy owl	*Glaucidium gnoma*
Northern rough winged swallow	*Stelgidopteryx serripennis*
Olive sided flycatcher	*Contopus cooperi*
Orange crowned warbler	*Vermivora celata*
Osprey	*Pandion haliaetus*
Peregrine falcon	*Falco peregrinus*
Purple martin	*Progne subis*
Pygmy nuthatch	*Sitta pygmaea*
Red tailed hawk	*Buteo jamaicensis*
Red winged blackbird	*Agelaius phoeniceus*
Song sparrow	*Melospiza melodia*
Spotted sandpiper	*Actitis macularius*
Steller's jay	*Cyanocitta stelleri*
Swainson's thrush	*Catharus ustulatus*
Tree swallow	*Tachycineta bicolor*

Common Name	*Scientific Name*
Turkey vulture	*Cathartes aura*
Warbling vireo	*Vireo gilvus*
Western gull	*Larus occidentalis*
White crowned sparrow	*Zonotrichia leucophrys*
Wilson's warbler	*Cardellina pusilla*
Woodpecker	*Family Picidae*
Wrentit	*Chamaea fasciata*

APPENDIX H. Jurisdictional Aquatic Resources Map

Wetlands/Aquatic Resources

Salmon Creek Sandblast Waste Abatement Project

EA No. 01-40141
EFIS 0120000111
SR-001 / Post Miles 42.40 /43.30

Legend

- Post Miles
- Project ESL
- BSA #1 (100 ft buffer)

Waters/Wetland Type

- Scrub-Shrub Wetland
- Coastal Scrub-Shrub Wetland
- Emergent Wetland
- Coastal Emergent Wetland
- Pond
- Perennial Stream (Salmon Creek)
- Intermittent Stream
- Ephemeral Stream
- Ditch
- Culvert
- Tidally Influenced Perennial Stream (Salmon Creek)

N

0 100 200 300
US Feet

Date created: 5/1/2023

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APPENDIX I. Vegetation Community Map

Vegetation Communities

Salmon Creek Sandblast Waste Abatement Project

EA No. 01-40141
EFIS 0120000111
SR-001 / Post Miles 42.40 /43.30

Legend

- Post Miles
- Project ESL
- BSA #1 (100 ft buffer)

Vegetation Communities

- Arroyo Willow Thickets
- Beach - unvegetated
- Common Velvet Grass - Sweet Vernal Grass Meadows
- Coyote Brush Scrub
- Coyote Brush Scrub (Garrya elliptica Association) Provisional Alliance
- Developed/Paved
- Dune Mat *
- Grand Fir forest *
- Idaho Fescue – California oatgrass (Festuca Rubra Association) *
- Landscaped
- Monterey cypress - Monterey pine Woodland stands
- Pacific Reed Grass Meadows *
- Perennial Stream
- Poison Oak Scrub
- Pond
- Red Alder Forest
- Salal – Berry Brambles (Rubus Ursinus Association)
- Salmon Creek (Tidal)
- Salmonberry - Wax Myrtle Scrub (Morella californica – Rubus spp. Association) *
- Salt Grass Flats
- Seaside woolly-sunflower - seaside daisy - buckwheat patches *
- Small-fruited Bulrush Marsh *
- Soft and western rush – Sedge marshes (Juncus effusus Association)

N

0 100 200 300 US Feet

* Sensitive Natural Community

Date created: 4/28/2023

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APPENDIX J. Special Status Plant Locations Map

Special-Status Plants

Salmon Creek Sandblast Waste Abatement Project

EA No. 01-40141
EFIS 0120000111
SR-001 / Post Miles 42.40 /43.30

Legend

- Post Miles
- Project ESL
- BSA #4 (330 ft buffer)

Special Status Plants

- fringed cornlily (CRPR 4.3)
- leafy-stemmed mitrewort (CRPR 4.2)
- Oregon coast paintbrush (CRPR 2B.2)
- Pacific gilia (CRPR 1B.2)
- Point Reyes checkerbloom (CRPR 1B.2)
- swamp harebell (CRPR 1B.2)

Butterfly Larval Host Plants

- dog violet
- harlequin lotus (CRPR 4.2)

N

0 100 200 300
US Feet

Maxar, Microsoft

Date created: 5/1/2023

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SALMON CREEK SANDBLAST WASTE ABATEMENT PROJECT - NES

Final Audit Report 2023-06-06

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