APPENDIX E

Biological Resources Assessment

* The Biological Resources Assessment (BRA) analyzes additional areas including distribution lines that are not considered part of the Project analyzed in the Initial Study/Mitigated Negative Declaration (IS/MND). Acreages and species potential to occur were further refined in the analysis of the IS/MND to reflect solely the areas and activities that are part of the Project.

DRAFT

Biological Resources Assessment

Rio Dell Feeder Project

JANUARY 2026

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
amsl	above mean sea level
BSA	Biological Study Area
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CTS	California tiger salamander
CWA	Clean Water Act
DPS	distinct population segment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EFH	essential fish habitat
ESU	evolutionarily significant unit
HDD	Horizontal Direct Drilling
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NOAA	National Oceanic and Atmospheric Administration
OHWM	Ordinary High Water Mark
PCE	primary constituent element
RWQCB	Regional Water Quality Control Board
SMA	Streamside Management Areas
SR	State Route
SSC	Species of Special Concern
TOB	top of bank
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

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1 Introduction

The proposed Rio Dell Feeder Project (project) involves the installation of two 16-inch-diameter conduits extending under the Eel River, starting approximately 500 feet east-northeast of State Route (SR) 101 along North Pacific Avenue in Rio Dell, Humboldt County, California, utilizing horizontal directional drilling (HDD) methods. An electrical distribution line would be pulled through one of the conduits, and the other would be capped and retained for future installation of an as-yet unplanned additional distribution line. The new distribution line would connect to upgraded and existing utility infrastructure located north and south of the Eel River, ultimately connecting to the existing Rio Dell Substation.

The following terms are used in this report to describe the areas studied and affected by the proposed project, from least to most inclusive:

- The "project site" refers to the area that would be physically affected by construction activities associated with the proposed project, including temporary disturbance and the location of any permanent structures.
- The "biological study area" (BSA) includes the project site plus a 25-foot-wide buffer from both sides of the proposed distribution alignment centerline and a 50-foot-wide buffer surrounding each proposed HDD bore site. The BSA encompasses approximately 25 acres.

A general biological reconnaissance survey, formal aquatic resource delineation, and vegetation mapping were conducted within the BSA on April 30, 2025.

The purpose of this biological resources assessment (report) is to describe the existing biological resources within the BSA in terms of vegetation, wildlife, special-status species and their habitat, jurisdictional aquatic resources, and wildlife movement. This report will be used to inform the analysis of potential project impacts on biological resources under the California Environmental Quality Act (CEQA) and could be used as necessary to provide biological support for upcoming applications to the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), North Coast Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

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2 Environmental Setting

2.1 Site Location

The approximately 25-acre BSA is located north of and within the City of Rio Dell, Humboldt County, California (Figure 1, Project Location). The BSA is situated within Townships 1N and 2N, Ranges 1W and 1E, and Sections 5, 6, 31, and 36 of the 7.5-minute U.S. Geological Survey Hydesville, Scotia, and Fortuna quadrangles. The approximate center of the BSA corresponds to 40.507398 latitude and −124.113765 longitude (decimal degrees). Surrounding land use consists of primarily of rural residential properties, including cattle pasture and undeveloped land supporting riparian forest and commercial timberlands (Figure 2, Biological Study Area).

2.2 Topography and Soils

The BSA is in the Outer North Coast Ranges District within the North Coast Region of California. Geology at the site is classified as marine and nonmarine (continental) sedimentary rocks. Site geology is mostly nonmarine and associated with unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits (Conservation Biology Institute 2025). The BSA is relatively flat, with a moderate shift in topography toward the Eel River. Elevations in the BSA range from approximately 40 to 180 feet above mean sea level (amsl).

According to the Natural Resources Conservation Service, there are five soil types mapped in the BSA: Ferndale, 0 to 2 percent slopes; Hookton–Urban Land complex, 0 to 2 percent slopes; Hookton–Tablebluff–Cannonball complex, 9 to 15 percent slopes; water and fluvents, 0 to 2 percent slopes; and Dungan, 0 to 2 percent slopes (Figure 3, Soils). The Ferndale series consists of very deep, well-drained soils that occur on high floodplain steps on alluvial plains. They are formed in alluvium derived from mixed sources. The Hookton series consists of very deep, somewhat poorly drained soils that occur on erosional remnants, drainageways, and dissected terraces. Soils in the Hookton series are formed in alluvium derived from mixed sources, and they cover approximately one-third of the BSA. The Ferndale series covers the majority of the BSA. Neither the Ferndale nor the Hookton soil series is considered hydric. The Dungan series consists of very deep, well-drained soils formed from mixed alluvium. They occur on high floodplain steps, alluvial fans, and fan remnants of alluvial plains, and they cover a small portion of the BSA. The remainder of the BSA is covered by water and fluvents, which are soils that are formed in recent water-deposited sediments on floodplains, fans, and deltas. Both the Dungan series and water and fluvents are considered hydric. (USDA 2025a, 2025b). Soil types within the BSA are summarized in Table 1.

Table 1. Soils Mapped in the BSA

Soil Type	Hydric	Acreage
Ferndale, 0% to 2% slopes	No	16.10
Hookton–Urban Land complex, 0% to 2% slopes	No	4.21
Hookton–Tablebluff–Cannonball complex, 9% to 15% slopes	No	3.60
Water and fluvents, 0% to 2% slopes	Yes	0.82
Dungan, 0% to 2% slopes	Yes	0.31

Sources: USDA 2025a, 2025b.

2.3 Alterations, Current and Past Land Use

The BSA currently supports cattle grazing, an active tree farm, and residential use. An online search of the oldest aerial photographs of the area revealed a historical photograph from 1940 (NETR 2025). Based on the aerial photograph, land use at the BSA was agricultural and residential in 1940 (NETR 2025). Construction of SR-101 through Rio Dell occurred between 1972 and 1983. The density of residential properties increases slowly from 1956 to 2022 (the latest available photographs are from 2022).

2.4 Hydrologic Setting

The BSA occurs within the Eel River Watershed (Hydrologic Unit Code 12-180101051003) (Figure 4, Hydrologic Setting). The USFWS National Wetlands Inventory identifies riverine habitats within the Eel River (R3USC), bordered by freshwater forested/shrub wetland habitat (PSS1C) along both sides of the river. On the north side of the Eel River in the northern portion of the BSA, there are also multiple patches of freshwater emergent wetland habitat (PEM1A) interspersed within the freshwater forested/shrub wetland habitat (PSS1C) (USFWS 2025a) (Figure 4). In addition, portions of the BSA near the Eel River are within Zone AE, an area at high risk of flooding, according to the Federal Emergency Management Agency (FEMA 2025).

3 Regulatory Setting

3.1 Federal

3.1.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by USFWS for most plant and animal species and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. The ESA defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under the ESA, it is unlawful to take any listed species; the ESA defines "take" as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

The ESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement. Upon development of a habitat conservation plan, USFWS can issue incidental take permits for listed species.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others. Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA protects more than 800 species of birds and prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). Additionally, Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The Executive Order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species. See 85 FR 21262 for a full list of bird species not covered under the MBTA.

Two species of eagles that are native to the United States, the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), were granted additional protection within the United States under the Bald and Golden Eagle Protection Act (16 USC 668–668d) to prevent the species from becoming extinct.

3.1.3 Clean Water Act

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, USACE has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

The definition of waters of the United States establishes the geographic scope for authority under Section 404 of the CWA; however, the CWA does not specifically define waters of the United States, leaving the definition open to statutory interpretation and agency rulemaking. The definition of what constitutes "waters of the United States" (provided in 33 CFR Section 328.3[a]) has changed multiple times over the past few decades starting with the *United States v. Riverside Bayview Homes, Inc.* court ruling in 1985. Subsequent court proceedings, rule makings, and congressional acts in 2001 (*Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*), 2006 (*Rapanos v. United States*), 2015 (Clean Water Rule), 2018 (suspension of the Clean Water Rule), 2019 (formal repeal of the Clean Water Rule), 2020 (Navigable Waters Protection Rule), and 2021 (*Pasqua Tribe et al. v. United States Environmental Protection Agency*, resulting in remand and vacatur of the Navigable Waters Protection Rule and a return to "the pre-2015 regulatory regime") have attempted to provide greater clarity to the term and its regulatory implementation. On December 30, 2022, the agencies announced the final Revised Definition of "Waters of the United States" rule (Rule) (88 CFR 3004–3144). The Rule was published in the Federal Register on January 18, 2023, and became effective on March 20, 2023, restoring federal jurisdiction over waters that were protected prior to 2015 under the CWA for traditional navigable waters, the territorial seas, interstate waters, and upstream water resources that significantly affect those waters. The Rule represents a re-expansion of federal jurisdiction over certain water bodies and wetlands previously exempt pursuant to the 2020 Navigable Waters Protection Rule. The Rule also considers various subsequent court decisions including two notable Supreme Court decisions.

There are two key changes that the Rule incorporates. Firstly, the Rule reinstates the "Significant Nexus" test. The "Significant Nexus" test refers to waters that either alone, or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, or the territorial seas (86 FR 69372–69450). The "Significant Nexus" test attempts to establish a scientific connection between smaller water bodies, such as ephemeral or intermittent tributaries, and larger, more traditional navigable waters such as rivers. Significant nexus evaluations take into consideration hydrologic and ecologic factors including, but not limited to, volume, duration, and the frequency of surface water flow in the resource and its proximity to a traditional navigable water, and the functions performed by the resource on adjacent wetlands. Second, the Rule adopts the "Relatively Permanent Standard" test. To meet the "Relatively Permanent Standard" water bodies must be relatively permanent, standing, or continuously flowing and have a continuous surface connection to such waters.

On May 25, 2023, the Supreme Court issued its long-anticipated decision in *Sackett v. Environmental Protection Agency*, in which it rejected the U.S. Environmental Protection Agency (EPA) claim that "waters of the United States," as defined in the CWA, includes wetlands with an ecologically significant nexus to traditional navigable waters. The Supreme Court held that only those wetlands with a continuous surface connection to traditional navigable waterways would be afforded federal protection under the CWA. Specifically, to assert jurisdiction over an adjacent wetland under the CWA, a party must establish that (1) the adjacent body of water constitutes water(s) of the United States (i.e., a relatively permanent body of water connected to traditional interstate navigable waters) and (2) the

wetland has a continuous surface connection with that water, making it difficult to determine where the water ends and the wetland begins.

On August 29, 2023, EPA and USACE announced the final rule amending the 2023 definition of "waters of the United States," conforming with the *Sackett v. Environmental Protection Agency* decision. Some of the key changes include removing the significant nexus test from consideration when identifying tributaries and other waters as federally protected and revising the adjacency test when identifying federally jurisdictional wetlands. Under EPA's new "waters of the United States" definition, a water of the United States must be a relatively permanent, standing, or continuously flowing body of water that has an apparent surface connection to a traditionally navigable water to fall within federal purview. The new rule applies to wetlands and streams throughout the United States. Although the Sackett opinion did not specifically reference streams, EPA's new rule extends the "continuous surface connection" standard to streams, thereby removing non-permanent, ephemeral streams that do not meet these standards from federal jurisdiction.

The term "wetlands" (a subset of waters of the United States) is defined in Title 33 of the Code of Federal Regulations (CFR), Section 328.3(c)(16), as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water mark" (OHWM), which is defined in 33 CFR 328.3(c)(7) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

3.1.4 Magnuson–Stevens Fishery Conservation and Management Act

The Magnuson–Stevens Fishery Conservation and Management Act of 1976 (Magnuson–Stevens Act) takes immediate action to conserve and manage fishery resources found off the coasts of the United States, and the anadromous species and continental shelf fishery resources of the United States, by exercising sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone of the United States, and exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, continental shelf fishery resources and fishery resources in the special areas.

3.1.4.1 Essential Fish Habitat

Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the Magnuson–Stevens Act to establish new requirements for essential fish habitat (EFH) descriptions in federal fishery management plans. In addition, the Magnuson–Stevens Act established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. Pursuant to the Magnuson–Stevens Act:

- Federal agencies must consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries must provide conservation recommendations for any federal or state action that would adversely affect EFH.

- Federal agencies must provide a detailed response in writing to the NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the effect of the activity on EFH. In the case of a response that is inconsistent with the NOAA Fisheries' EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations.

EFH has been defined for the purposes of the Magnuson–Stevens Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NOAA Fisheries has further added the following interpretations to clarify this definition:

- "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate.
- "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem.
- "Spawning, breeding, feeding, or growth to maturity" covers the full life cycle of a species.
- "Adverse effect" means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

EFH consultation with the NOAA Fisheries is required regarding any federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action may adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH. Under Section 305(b)(4) of the Magnuson–Stevens Act, NOAA Fisheries is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that may adversely affect EFH. Wherever possible, NOAA Fisheries utilizes existing interagency coordination processes to fulfill EFH consultations with federal agencies. For the proposed action, this goal is being met by incorporating EFH consultation into the ESA Section 7 consultation, as represented by this Essential Fish Habitat Assessment.

3.2 State

3.2.1 California Endangered Species Act

CDFW administers the California Endangered Species Act (CESA), which prohibits the "take" of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in the state of California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." CESA defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the [California Fish and Game] Commission as rare on or before January 1, 1985, is a threatened species." A candidate species is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the Commission has published a notice of proposed regulation to add the species to either list." CESA does not list invertebrate species.

CESA authorizes the taking of threatened, endangered, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, CESA allows CDFW to adopt a CESA incidental take authorization as satisfactory for CEQA purposes based on finding that the federal permit adequately protects the species and is consistent with state law.

A CESA permit may not authorize the take of "fully protected" species that are protected in other provisions of the California Fish and Game Code (CFGC), discussed further below.

3.2.2 California Fish and Game Code

Under the CFGC, CDFW provides protection from "take" for a variety of species, including Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the CFGC provide that designated fully protected species may not be taken or possessed without a permit. Incidental take of these species is not authorized by law. Pursuant to Section 3503.5 of the CFGC, it is unlawful to take, possess, or destroy any birds of prey; or to take, possess, or destroy any nest or eggs of such birds. Birds of prey refer to species in the orders Falconiformes and Strigiformes. Nests of all other birds (except English sparrow [*Passer domesticus,* also referred to as house sparrow] and European starling [*Sturnus vulgaris*]) are protected under Sections 3503 and 3513 of the CFGC. Section 4150 also protects bats from being taken, possessed, or killed without appropriate permits.

Under Sections 1600–1616 of the CFGC, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. Diversion, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife requires authorization from CDFW by means of entering into an agreement pursuant to Section 1602 of the CFGC. The limits of CDFW's jurisdiction are defined in the code as the "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (Section 1601). In practice, CDFW usually delineates its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is greater.

3.2.3 Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (Porter–Cologne Act) protects water quality and the beneficial uses of water. It applies to surface water and groundwater. Under this law, the State Water Resources Control Board

develops statewide water quality plans, and the RWQCBs develop regional basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of statewide plans and basin plans. Waters regulated under the Porter–Cologne Act include isolated waters that are not regulated by USACE. RWQCBs regulate discharging waste, or proposing to discharge waste, within any region that could affect a "water of the state" (California Water Code, Section 13260[a]). Waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). Developments with impacts on jurisdictional waters must demonstrate compliance with the goals of the Porter–Cologne Act by developing stormwater pollution prevention plans, standard urban stormwater mitigation plans, and other measures to obtain a CWA Section 401 certification. If a CWA Section 404 permit is not required for the project, RWQCB may still require a permit (i.e., Waste Discharge Requirement) for impacts to waters of the state under the Porter–Cologne Act.

3.2.4 California Environmental Quality Act

CEQA (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.) require identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not currently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or…[t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

3.3 Local

3.3.1 Humboldt County General Plan

The Conservation and Open Space element of the Humboldt County General Plan contains policies intended to protect biological resources within Humboldt County from future development and related impacts. The goals and policies relating to biological resources that may apply to the project are listed below (Humboldt County 2017):

Policy 1. Compatible Land Uses. Areas containing sensitive habitats shall be planned and zoned for uses compatible with the long-term sustainability of the habitat. Discretionary land uses and building activity in proximity to sensitive habitats shall be conditioned or otherwise permitted to prevent significant degradation of sensitive habitat, to the extent feasible consistent with California Department of Fish and Wildlife guidelines or recovery strategies.

Policy 2. Critical Habitat. Discretionary projects which use federal permits or federal funds on private lands that have the potential to impact critical habitat shall be conditioned to avoid significant habitat modification or destruction consistent with federally adopted Habitat Recovery Plans or interim recovery strategies.

Policy 4. Development within Stream Channels. Development within stream channels shall be permitted when there is no lesser environmentally damaging feasible alternative, and where the best feasible mitigation measures have been provided to minimize adverse environmental effects. Development shall be limited to essential, non-disruptive projects as listed in Standard BR-S6 - Development within Stream Channels.

Policy 5. Streamside Management Areas. To protect sensitive fish and wildlife habitats and to minimize erosion, runoff, and interference with surface water flows, the County shall maintain Streamside Management Areas, along streams including intermittent streams that exhibit in-channel wetland characteristics and off-channel riparian vegetation.

Policy 6. Development within Streamside Management Areas. Development within Streamside Management Areas shall only be permitted where mitigation measures (Standards BR-S8 - Required Mitigation Measures, BR-S9 - Erosion Control, and BR-S10 - Development Standards for Wetlands) have been provided to minimize any adverse environmental effects, and shall be limited to uses as described in Standard BR-S7 - Development within Streamside Management Areas.

Policy 7. Wetland Identification. The presence of wetlands in the vicinity of a proposed project shall be determined during the review process for discretionary projects and for ministerial building and grading permit applications, when the proposed building development activity involves new construction or expansion of existing structures or grading activities. Wetland delineation by a qualified professional shall be required when wetland characterization and limits cannot be easily inventoried and identified by site inspection.

Policy 8. Wetlands Banking. The County supports the development of a wetlands banking system that minimizes potential conversion of prime agriculture lands to wetlands.

Policy 9. Oak Woodlands. Oak woodlands shall be conserved through the review and conditioning of discretionary projects to minimize avoidable impacts to functional capacity and aesthetics, consistent with state law.

Policy 10. Invasive Plant Species. The County shall cooperate with public and private efforts to manage and control noxious and exotic invasive plant species. The County shall recommend measures to minimize the introduction of noxious and exotic invasive plant species in landscaping, grading and major vegetation clearing activities.

Policy 11. Biological Resource Maps. Biological resource maps shall be consulted during the ministerial and discretionary permit review process in order to identify habitat concerns and to guide mitigation for discretionary projects that will reduce biological resource impacts to below levels of significance, consistent with CEQA.

Policy 12. Agency Review. The County shall request the California Department of Fish and Wildlife, as well as other appropriate trustee agencies and organizations, to review plans for development within Sensitive Habitat, including Streamside Management Areas. The County shall request NOAA Fisheries or U.S. Fish and Wildlife Service to review plans for development within critical habitat if the project includes federal

permits or federal funding. Recommended mitigation measures to reduce impacts below levels of significance shall be considered during project approval, consistent with CEQA.

Policy 13. Landmark Trees. Establish a program to identify and protect landmark trees, including trees that exhibit notable characteristics in terms of their size, age, rarity, shape or location.

Standard 1. Development Excluded from Sensitive Habitat Policies. Proposed development occurring within areas containing sensitive habitats shall be subject to the conditions and requirements of this chapter except for these exclusions (see page 10-17).

Standard 2. Agency Consultation. For discretionary projects with potential to impact critical, or sensitive habitats, the County will seek specific recommendations from the appropriate agencies, as applicable to the specific project location, class of development, or natural resource involved

Standard 3. Critical Habitat Defined. Critical habitats are habitats necessary for the protection of threatened or endangered species listed under the Federal Endangered Species Act. Designation, mapping and enforcement of critical habitat is the responsibility of federal agencies.

Standard 4. Sensitive Habitat Defined. Sensitive habitats are defined as a biologically unique, limited, or an especially valuable habitat type for a species whose habitat requirements, if significantly changed, would cause a threatening change to the species population across its range and may include the following:

A. Habitat necessary for the protection of rare, threatened and endangered species as listed under the FESA or CESA
B. Migratory deer winter range
C. Roosevelt elk range
D. Sensitive avian species rookery and nest sites (e.g. osprey, great blue heron and egret)
E. Streams and streamside areas
F. Wetlands
G. Protected vascular plant communities as listed by the US Fish & Wildlife Service or the California Department of Fish and Wildlife.
H. Other sensitive habitats and communities as may be currently, correctly and accurately listed in the California Department of Fish and Wildlife‘s California Natural Diversity Data Base, as amended periodically.

Standard 5. Streamside Management Areas Defined. Streamside Management Areas (SMA) are identified and modified as follows:

A. Areas specifically mapped as SMA and Wetland (WR) Combining Zones, subject to verification and adjustment pursuant to site-specific biological reporting and review procedures.
B. For areas along streams not specifically mapped as SMA and Wetland (WR) Combining Zones, the outer boundaries of the SMA shall be defined as:
    1. 100 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of perennial streams.
    2. 50 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of intermittent streams.

3. The width of Streamside Management Areas shall not exceed 200 feet measured as a horizontal distance from the top of bank.

C. The width of Streamside Management Areas shall be expanded to up to 200 feet measured as a horizontal distance from the top of bank as necessary to include slides, or areas with visible evidence of slope instability.

D. The Streamside Management Area may be reduced or eliminated where the County determines, based on specific factual findings, that the mapping of the SMA is not accurate, there are no in-channel wetland characteristics or off-channel riparian vegetation, the reduction will not significantly affect the biological resources of the SMA on the property. When the prescribed buffer would prohibit development of the site for the principal use for which it is designated, measures shall be applied that result in the least environmentally damaging feasible project.

E. SMAs do not include watercourses consisting entirely of a man-made drainage ditch, or other man-made drainage device, construction, or system.

Standard 7. Development within Streamside Management Areas. Development within Streamside Management Areas may be approved where consistent with Policy BR-P6, Development within Streamside Management Areas, and shall be limited to the following uses:

A. Development permitted within stream channels per BR-S6, Development within Stream Channels.

B. Timber management and harvest activities under a timber harvesting plan or non-industrial timber management plan, or activities exempt from local regulation as per California Public Resources Code 4516.5(d).

C. Road, bridge, and trail replacement or construction, when it can be demonstrated that it would not degrade fish and wildlife resources or water quality, and that vegetative clearing is kept to a minimum.

D. Removal of vegetation for disease control or public safety purposes.

E. Normal, usual and historical agricultural practices and uses which are principally permitted within the SMA shall not be considered development for the purposes of this standard.

F. Normal, usual and historical agricultural and surface mining practices and uses which are principally permitted within the SMA shall not be considered development for the purposes of this standard.

Standard 8. Required Mitigation Measures. Mitigation measures for development within Streamside Management Areas shall, at a minimum, include:

A. Retaining snags unless felling is required by CAL-OSHA, by CAL FIRE forest and fire protection regulations or for public health and safety reasons. The felling must be approved by the Planning Director. Felled snags shall be left on the ground if consistent with fire protection regulations and the required treatment of slash or fuels.

B. Retain live trees with visible evidence of current or historical use as nesting sites by hawks, owls, eagles, osprey, herons, kites or egrets.

C. Erosion control measures (as per Standard BR-S9- Erosion Control).

D. Maximum feasible retention of overstory canopy in riparian corridors.

Standard 9. Erosion Control. Erosion control measures for development within Streamside Management Areas shall include the following: A. During construction, land clearing and vegetation removal will be minimized, following the provisions of the Water Resources Element and the standards listed here (see page 10-20).

Standard 10. Development Standards for Wetlands. Development standards for wetlands shall be consistent with the standards for Streamside Management Areas, as applicable except that the widths of the SMA for wetlands are as follows: seasonal wetlands = 50 ft. perennial wetlands = 150 ft. and the setback begins at the edge of the delineated wetland. Buffers may be reduced based on site specific information and consultation with the California Department of Fish and Wildlife. No buffer shall be required for man-made wetlands except wetlands created for mitigation purposes.

Standard 11. Wetlands Defined. The County shall follow the US Army Corps of Engineers Wetland Delineation manual in the identification and classification of wetlands which considers wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Standard 12. Discretionary Review within Oak Woodlands. Discretionary projects which may result in a significant effect on oak woodlands shall evaluate and mitigate any impacts, consistent with the provisions of CEQA, specifically Public Resources Code Section 21083.4.

Standard 13. Principally Permitted Accessory Use. Invasive plant species management and control measures shall be considered a principally permitted accessory use in all zones, except in the Coastal Zone.

3.3.2 City of Rio Dell

The Open Space and Conservation Element (Chapter 5) of the City of Rio Dell General Plan contains policies intended to protect biological resources within the City of Rio Dell from future development and related impacts. The goals and policies relating to biological resources in the city limits that may apply to the proposed project are listed below (City of Rio Dell 2015):

Policy CO 5.2-1. Riparian areas within the City shall be protected when adjacent development projects are proposed.

Policy CO 5.2-2. Maintain and expand the tree canopy within and outside the developed areas of the City.

Policy CO 5.2-3. Protect distinctive natural vegetation such as riparian corridors and mixed evergreen forests by maintaining the natural features as a whole. Preservation of individual trees or features rather than the larger habitat does not satisfy this policy.

Policy CO 5.2-7. Conserve and protect the area's natural vegetation by ensuring that:

- Retaining existing riparian vegetation within the conservation buffers along all natural watercourses to preserve riparian vegetation and habitat.
- Restoring degraded riparian habitats where feasible.

4 Methods

4.1 Literature Review

Prior to conducting the field survey, Dudek reviewed pertinent online and literature sources in April 2025. This review consisted of the following online databases and reports: the USFWS Information for Planning and Consultation (IPaC) Trust Resource Report, CDFW California Natural Diversity Database (CNDDB), the California Native Plant Society Online Inventory of Rare and Endangered Vascular Plants, and the NOAA Fisheries Critical Habitat Mapper and Essential Fish Habitat Mapper. The IPaC report was based on a query for the BSA (USFWS 2025b). The CNDDB and California Native Plant Society databases were queried for the 13 U.S. Geological Survey 7.5-minute quadrangles containing and immediately surrounding the BSA: Buckeye Mountain, Bull Creek, Fields Landing, Ferndale, Fortuna, Hydesville, Iaqua Buttes, McWhinney Creek, Owl Creek, Petrolia, Redcrest, Scotia, and Taylor Peak (CDFW 2025a; CNPS 2025a). iNaturalist filtered for verifiable and research grade occurrences was searched as supplemental to the above-listed databases (iNaturalist 2025).

Following a review of the above resources, Dudek biologists determined the potential for special-status plant and wildlife species to occur on site. Determinations were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range and nearest occurrence records of each species. No protocol-level surveys for special-status species were conducted; the field survey was focused on evaluating the potential for the BSA to provide habitat for these species. The potential for occurrence of each species was summarized according to the categories listed below.

- **Observed.** The species was observed on site by Dudek biologists during the April 30, 2025, field survey.
- **Known to occur:** The species has been documented on the site by a recent reliable source (<20 years old) or there are historic occurrences (>20 years old or extirpated) within the BSA.
- **Potential to occur:** The species has not been documented in the BSA but is known to recently occur in the vicinity and habitat is present in the BSA, **OR** the species has not been documented on or within dispersal range of the site, but the site is within its known geographic range, and moderate- to high-quality habitat is present. General rarity may be considered, **OR** the project does not contain suitable habitat, but there are occurrences within dispersal distance of recent occurrences and therefore the species may occur briefly during seasonal migration to and from suitable habitat.
- **Not expected to occur:** The species has not been documented in the BSA or vicinity, the site is within the known range of the species but suitable habitat for the species is of low quality, **OR** the BSA is outside the known geographic or elevational range of the species and/or the site does not support suitable habitat for the species.

For this report, special-status plant and wildlife species are defined as those that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the federal ESA; (2) listed or candidates as threatened or endangered for listing under CESA; (3) a state fully-protected species; (4) a CDFW species of special concern (SSC); or (5) a species listed on the California Native Plant Society Inventory of Rare and Endangered Plants with a California Rare Plant Rank of 1 or 2.

4.2 Field Reconnaissance

Dudek biologists Allie Sennett and Elizabeth Meisman performed a field survey of the approximately 25-acre BSA on April 30, 2025. The survey was conducted on foot to visually cover the entire BSA. Field notes, an aerial photograph with an overlay of the property boundary, and ArcGIS FieldMaps were used to map vegetation communities and record any sensitive biological resources within the BSA. No protocol-level or focused surveys for special-status species were conducted as part of the field reconnaissance. As such, the focus of the field visit was to assess overall habitat suitability for the target species identified because of the literature and database review described in Section 4.1, Literature Review. Wildlife species detected during the field survey by sight, vocalization, tracks, scat, or other signs were recorded directly into a field notebook. The site was also scanned with binoculars to aid in the identification of wildlife.

4.3 Aquatic Resources Delineation

Concurrent with the fieldwork on April 30, 2025, Dudek biologists conducted a jurisdictional delineation to identify and map the extent of aquatic resources within the BSA that are potentially subject to regulation under federal CWA Sections 401 and 404, CFGC Section 1600, and/or the provisions of the Porter–Cologne Act. All areas that were identified during the desk review as being potentially subject to jurisdiction were field-verified and mapped where present. Aquatic resources delineation methods are detailed below, and the results are incorporated into this report. Additionally, Stantec biologists conducted an initial jurisdictional aquatic resources delineation on February 3, 2025. Refer to Appendix A for the draft Stantec report, which includes methods and results. Figures 6-1 through 6-6, Aquatic Resources, show the locations and types of aquatic resources within the BSA.

Potential aquatic resources were delineated based on methodology described in the USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement for the Western Mountains, Valleys, and Coast Region (USACE 2010). Non-wetland waters of the United States or state were delineated based on the presence of an OHWM, as determined using the methodology in the OHWM Field Guide for the Western Mountains, Valleys, and Coast Region (USACE 2014). Wetland plant indicator status for each plant was determined using the Western Mountains, Valleys, and Coast 2020 Regional Wetland Plant List (USACE 2020).

The delineation also defined areas under the jurisdiction of the CDFW pursuant to Sections 1600–1603 of the CFGC. CDFW asserts jurisdiction over rivers, streams, and lakes to the extent of the top of bank (TOB). The term "bank" is interpreted to encompass the physical bank of the stream that rises vertically above and horizontally away from it (CDFG 2010a). TOB was mapped as the physical break in slope between the channel and surrounding upland. CDFW also asserts jurisdiction over riparian vegetation associated with these features. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology; Cowardin et al. 1979). Additionally, waters of the state were delineated based on watercourse characteristics present in the field, which include surface flow, sediment transportation and sorting, physical indicators of channel forms, and channel morphology. CDFW also asserts jurisdiction to the extent of the edge of riparian vegetation associated with these features. Riparian status was determined by the USACE's National Wetland Plant List indicator of the dominant species in a community being classified as obligate, facultative wetland, or facultative (USACE 2020). In general, the change in species cover and/or composition from the surrounding upland to predominantly hydrophytic vegetation was used to determine CDFW-regulated riparian areas associated with a stream channel.

Wetlands subject to RWQCB jurisdiction were delineated based on methodology described in the USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement for the Western Mountains, Valleys, and Coast Region (USACE 2010). Non-wetland waters subject to RWQCB jurisdiction were delineated to the extent of the TOB as described above or based on the presence of an OHWM, as determined using the methodology in the OHWM Field Guide for the Western Mountains, Valleys, and Coast Region (USACE 2014).

The same methods used to delineate waters regulated by CDFW were reviewed to assist in determining the limits of non-wetland waters under the jurisdiction of the RWQCB. In 2019, the State Water Resources Control Board issued the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019). These procedures define wetlands that encompass "the full range of wetland types commonly recognized in California, including some features not protected under federal law, and reflects current scientific understanding of the formation and functioning of wetlands." The State Water Resources Control Board defines wetlands as follows: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." The project applicant is requesting that USACE process this jurisdictional determination request as a Preliminary Jurisdictional Determination, wherein all aquatic resources are treated as jurisdictional waters of the United States.

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5 Results

5.1 Vegetation Communities and Land Cover Types

Land cover on the BSA consists of terrestrial non-vegetative land covers and natural vegetation communities. The vegetation communities and land covers have been adapted from A Manual of California Vegetation, Online Edition (CNPS 2025b). Five vegetation communities and three other land cover types were documented in the BSA: annual grassland, pampas grass patches, red alder riparian, redwood forest, willow riparian, dirt road, open water, and urban/developed (refer to Table 2 and Figures 5-1 through 5-6, Vegetation Communities and Land Cover Types). Representative photos of the vegetation communities and land cover types are included in Appendix B.

Table 2. Vegetation Communities and Land Cover Types in the BSA

CDFW Alliance Code	Vegetation Community or Land Cover Type	Rarity Rank		Acreage
		Global	State	
Vegetation Communities				
42.027.00	Annual grassland	GNA	SNA	7.30
42.070.00	Pampas grass patches	GNA	SNA	0.05
61.410.00	Red alder riparian	G5	S4	3.53
86.100.00	Redwood forest	G3	S3	0.06
61.204.00	Willow riparian	G4	S3.2	1.09
Other Land Cover Types				
00.000.00	Dirt road	—	—	2.77
00.000.00	Open water	—	—	0.65
00.000.00	Urban/developed	—	—	9.57
			Total[a]	**25.01**

Notes: BSA = biological study area; CDFW = California Department of Fish and Wildlife.
Global ranks: G5 = secure; G=4 apparently secure; G3 = vulnerable.
State ranks: S4= Apparently secure in state; S3 = vulnerable.
State ranks of S1–S3 are considered highly imperiled by CDFW.
[a] Total may not sum precisely due to rounding.

5.1.1 Vegetation Communities

Annual Grassland

The annual grassland vegetation community is characterized by non-native grass species being dominant or co-dominant in the herbaceous layer, including oats (*Avena barbata, A. fatua*), purple false brome (*Brachypodium distachyon*), big quakinggrass (*Briza maxima*), ripgut brome (*Bromus diandrus*), mouse barley (*Hordeum murinum*), and soft brome (*Bromus hordeaceus*). This community has an open to continuous herbaceous canopy less than 4 feet in height. This community occurs in all topographic settings in foothills, waste places, rangelands, and openings in woodlands. Emergent trees and shrubs may be present at low cover (CNPS 2025b).

Within the BSA, this vegetation community consists of a variety of non-native annual grasses and forbs, including slender oat (*Avena barbata*), ripgut brome, Columbia brome (*Bromus vulgaris*), cultivated radish (*Raphanus sativus*), Queen Anne's lace (*Daucus carota*), and winter vetch (*Vicia villosa*), among others. The annual grasslands alliance occurs on flat plains to pastureland at the northern and southern extents of the BSA.

Pampas Grass Patches

The pampas grass patches vegetation community is characterized by purple pampas grass (*Cortaderia jubata*) or Uruguayan pampas grass (*Cortaderia selloana*) being dominant in the herbaceous and shrub canopies. This semi-natural alliance has an open to continuous herbaceous layer less than 13 feet in height. Emergent trees and shrubs may be present at low cover. This community occurs on coastal land, disturbed areas, estuaries, grasslands, urban areas, and wetlands (CNPS 2025b).

Within the BSA, there is one occurrence of pampas grass patches north of the Eel River. This community consists of primarily purple pampas grass, with coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), and Himalayan blackberry (*Rubus armeniacus*) in lesser abundance. This community occurs along the upper banks of a wetland at the edge of the cattle pasture in the northern extent of the BSA.

Red Alder Riparian

The red alder riparian vegetation community is characterized by red alder (*Alnus rubra*) being dominant or co-dominant in the tree canopy. This community has a continuous tree canopy less than 131 feet in height, with a sparse to intermittent shrub layer. The herbaceous layer can be open to continuous, especially with ferns and forbs. This community occurs on stream and river backwaters, banks, bottoms, flood plains, mouths, terraces, and slopes of all aspects (CNPS 2025b).

Within the BSA, this vegetation community consists of red alder, bigleaf maple (*Acer macrophyllum*), and red osier (*Cornus sericea*), with an understory of blackberry species (*R. spectabilis*, *R. armeniacus*), California rose (*Rosa californica*), and willow species (*S. exigua* var. *hindsiana*, *S. lasiandra*). Although this alliance is not itself sensitive, it functions as a riparian community associated with the Eel River and therefore is considered sensitive for the purposes of this report.

Redwood Forest

The redwood forest vegetation community is characterized by coast redwood (*Sequoia sempervirens*) being dominant or co-dominant in the tree canopy. This community has an intermittent to continuous tree canopy less than 393 feet in height, with an infrequent to common shrub layer. The herbaceous layer can be absent to abundant. This community occurs on raised stream terraces, benches, all slopes and aspects, and ridges. This community is considered sensitive (CNPS 2025b).

Within the BSA, this vegetation community consists of redwood with Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), and tanoak (*Notholithocarpus densiflorus*). The sparse understory includes giant chainfern (*Woodwardia fimbriata*), poison oak, and creeping snowberry (*Symphoricarpos mollis*). Within the BSA, the redwood forest occurs on the north side of the Eel River.

Willow Riparian

The willow riparian vegetation community includes shining willow (*Salix lasiandra* var. *caudata*) as the dominant or co-dominant in the tree canopy. The tree canopy is intermittent to continuous and may include bigleaf maple, white alder (*Alnus rhombifolia*), red osier, California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), California live oak (*Quercus agrifolia*), willows (*Salix* spp.), and black elderberry (*Sambucus nigra*) as co-dominant species. The shrub layer is sparse to intermittent and the herbaceous layer is variable. This community typically occurs along rivers, streams, and some tidally influenced areas. This community is considered sensitive (CNPS 2025b).

Within the BSA, this vegetation community consists of willows (*Salix* spp.) and bigleaf maple in the tree canopy, and Himalayan blackberry and coyote brush in the dense understory. Herbaceous species in the understory include horsetail (*Equisetum* sp.), speedwell (*Veronica* sp.), and cultivated radish. Within the BSA, willow riparian occurs on the north side of the Eel River and south of the Eel River where wetlands or channels are proximate to the roadway.

5.1.2 Other Land Covers

Dirt Road

This land cover type within the BSA is composed of two dirt roads and road shoulders. While unpaved, these areas are heavily compacted and mostly devoid of vegetation due to regular disturbance by vehicle ingress and egress. Where present, vegetation along the road shoulder consists of ruderal or disturbance-tolerant non-native grasses and forbs, such as Italian plumeless thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), bristly oxtongue (*Helminthotheca echioides*), smooth cat's ear (*Hypochaeris glabra*), and ripgut brome.

Open Water

Although not recognized by the Manual of California Vegetation, Online Edition (CNPS 2025b), or the Natural Communities List (CDFW 2025b), open water is described by Oberbauer et al. (2008) as ponded bodies of water persisting year-round that consist of less than 10% vegetative cover. Open water may support submerged aquatic communities and can contain various substrate compositions, largely determined by the surrounding environment (Oberbauer et al. 2008). Within the BSA, this land cover type consists of the Eel River.

Urban/Developed

The urban/developed land cover type refers to areas that have been constructed on or otherwise physically altered to the point where vegetation is no longer present. Urban or developed areas are characterized by permanent or semi-permanent structures, hardscapes, and landscaped areas that require irrigation. Within the BSA, this land cover type consists of residential, commercial, and industrial uses, including paved roads. Where present, this land cover type includes native and exotic species such as California pepper tree (*Schinus molle*), London plane (*Platanus acerifolia*), purple plum (*Prunus cerasifera*), and sweetgum (*Liquidambar styraciflua*).

5.2 Plant and Wildlife Observed

5.2.1 Flora

A total of 65 native or naturalized plant species, including 32 native species (49 percent) and 33 non-native or unidentified species (Genus only) (51 percent), were recorded in the BSA during the April 30, 2025, field survey. A list of all plant species observed in the site during the survey is presented in Appendix C.

5.2.2 Fauna

A total of 43 wildlife species (32 of which were birds) were recorded in the BSA during the field survey (Appendix D, List of Observed Wildlife Species). Birds observed include species often associated with riparian forest, such as black-headed grosbeak (*Pheucticus melanocephalus*), Pacific-slope flycatcher (*Empidonax difficilis*), Swainson's thrush (*Catharus ustulatus*), chestnut-backed chickadee (*Poecile rufescens*), Wilson's warbler (*Cardellina pusilla*), orange-crowned warbler (*Leiothlypis celata*), Townsend's warbler (*Setophaga townsendi*), Pacific wren (*Troglodytes pacificus*), and wrentit (*Chamaea fasciata*). Additionally, many grassland-associated bird species were observed, such as house finch (*Haemorhous mexicanus*), American goldfinch (*Spinus tristis*), red-tailed hawk (*Buteo jamaicensis*), and white-crowned sparrow (*Zonotrichia leucophrys*). One amphibian species, northern red-legged frog (*Rana aurora*), was recorded during the field survey. At least two species of bumble bee (*Bombus* spp.) were observed foraging within the BSA. Other wildlife species observed within the BSA include disturbance-adapted species such as northern raccoon (*Procyon lotor*), black-tailed deer (*Odocoileus hemionus columbianus*), American crow (*Corvus brachyrhynchos*), and common raven (*Corvus corax*).

5.3 Special-Status Biological Resources

5.3.1 Sensitive Vegetation Communities

The BSA supports three sensitive vegetation communities or land cover types: redwood forest, red alder riparian, and willow riparian. Special-status habitats are those that are considered sensitive by CDFW, are considered rare within the region, or support special-status plants or animals.

- Redwood forest is a sensitive natural community with a state rank of S3 (vulnerable) and global rank of G3 (vulnerable) (CDFW 2025b).
- Red alder riparian and willow riparian communities associated with lakes, streams, and/or wetlands are protected by CFGC Section 1602.

The BSA also supports open water. This land cover is not listed by CDFW (2025d) as a sensitive natural community but has the potential to support sensitive species of wildlife. Impacts on high-quality occurrences of sensitive natural communities are typically considered significant under CEQA.

5.3.2 Potential Jurisdictional Aquatic Resources

Dudek mapped approximately 5.5 acres (519 linear feet) of potential jurisdictional aquatic resources, including federal and state jurisdictional wetlands, non-wetland waters, and riparian habitat (Table 3). Specifically, Dudek

biologists mapped one intermittent drainage (NWW-02), one ephemeral drainage (NWW-04), one freshwater emergent wetland (WET-01), and the Eel River (NWW-03). Jurisdictional aquatic resources in the BSA may be regulated under the CWA, CFGC, and Porter–Cologne Act.

Additionally, the red alder riparian and willow riparian vegetation communities in the BSA support aquatic resources potentially under federal and/or state jurisdiction (Table 3). Riparian vegetation communities associated with aquatic resources are assumed to be under the jurisdiction of CDFW pursuant to CFGC Section 1602. Refer to the vegetation community descriptions in Section 5.1 for the occurrence and description of riparian habitat within the BSA.

Table 3. Aquatic Resources Mapped in the BSA

Resource Type	Anticipated Jurisdiction	Linear Feet[a]	Acreage
Non-Wetland Waters			
NWW-04: Ephemeral Channel (OHWM/TOB)	RWQCB/CDFW	331	0.015
NWW-02: Intermittent Channel (OHWM)	USACE/RWQCB/CDFW	138	0.015
NWW-02: Intermittent Channel (TOB)	RWQCB/CDFW	—	0.051
NWW-03: Perennial Channel (OHWM)	USACE/RWQCB/CDFW	50	0.736
NWW-03: Perennial Channel (TOB)	RWQCB/CDFW	—	0.303
	Subtotal Non-Wetland Waters	*519*	*1.12*
Wetland Waters			
WET-01: Emergent Wetland	USACE/RWQCB/CDFW	—	0.065
Riparian			
RIP-01 through RIP-04: Riparian	CDFW	—	2.407
	Total Aquatic Resources	***519***	***3.593***

Notes: BSA = biological study area; OHWM = ordinary high water mark; TOP = top of bank; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife; USACE = U.S. Army Corps of Engineers.

[a] "—" is used to avoid duplicating linear feet calculations for the OHWM and TOB.

Non-Wetland Waters

Ephemeral Channel (NWW-04)

One ephemeral channel (NWW-04) comprises approximately 0.015 acres (331 linear feet) of the BSA. Ephemeral channels consist of stream channels that are naturally occurring rather than human created, and contain flowing water during, and for a short duration after, precipitation events. The hydrology of ephemeral channels is dependent on inputs during rain events and runoff from the surrounding uplands. The ephemeral drainage in the BSA flows roughly southwest through pastureland in the northeastern portion of the BSA. This channel appears to drain into a basin just outside of the BSA. Although this channel was not accessible during the field survey, it is discernible through a review of aerial photos and topographic data. The channel is estimated to be 1 to 2 feet wide.

Intermittent Channel (NWW-02)

One intermittent channel (NWW-02) comprises approximately 0.066 acres (138 linear feet) of the BSA. Intermittent channels generally have flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. Intermittent drainages are typically larger and lower-

gradient than ephemeral channels and are characterized by deeper pools or widenings throughout. The intermittent channel in the BSA flows south through red alder riparian before entering the Eel River. From bank to bank, the channel is approximately 25 feet wide with a 5-foot-wide bed containing about 4-inch-deep flowing water. The mildly sloping banks of the channel are primarily dominated by Himalayan blackberry, with a lesser abundance of riparian species such as red alder, arctic sweet coltsfoot (*Petasites frigidus* var. *palmatus*), and stinging nettle (*Urtica dioica*). At least two northern red-legged frogs were observed basking on the muddy banks of the channel during the April 30, 2025, field survey.

Perennial Channel (NWW-03)

One 50-foot linear segment of a perennial channel (NWW-03), the Eel River, comprises approximately 1.040 acres of the BSA. Perennial channels are generally inundated year-round in a normal rain year. The Eel River in the BSA flows west-northwest before entering the Pacific Ocean approximately 17 miles downstream of the BSA. From bank to bank, the channel is approximately 915 feet wide with an OHWM approximately 640 feet wide. The mildly to moderately sloping banks of the channel are generally sandy and support riparian species where the soil transitions from sandy to loamy at the upper banks. Riparian vegetation growing along the banks of the Eel River includes red alder, bigleaf maple, red osier, salmonberry (*Rubus spectabilis*), California rose, and willows (*S. exigua* var. *hindsiana*, *S. lasiandra*). As discussed above, one intermittent channel (NWW-02) in the BSA flows into the Eel River.

Wetland Waters

Emergent Wetland (WET-01)

One emergent wetland (WET-01) comprises approximately 0.065 acres of the BSA. This feature is characterized by erect, rooted herbaceous hydrophytes that require saturation or at least periodic flooding. The emergent wetland in the BSA is dominated by toad rush (*Juncus bufonius*), annual hairgrass (*Deschampsia danthonioides*), tall flatsedge (*Cyperus eragrostis*), and wild mint (*Mentha arvensis*), with a lesser abundance of hyssop loosestrife (*Lythrum hyssopifolia*), narrowleaf plantain (*Plantago lanceolata*), and eggbract sedge (*Carex leporina*), among others. This feature was dry during the April 30, 2025, field survey and saturated during the initial delineation conducted by Stantec biologists on February 3, 2025 (see Appendix A). There is an earthen berm present between the emergent wetland and the Eel River in the BSA. However, based on the high water line mapped during the initial delineation, it is assumed that this wetland is hydrologically connected to the Eel River during periods of high flows. Furthermore, this wetland is located within the 100-year floodplain of the Eel River (FEMA 2025).

Riparian

Riparian (RIP-01 through RIP-04)

Four occurrences of riparian vegetation (RIP-01 through RIP-04) comprise approximately 2.407 acres of the BSA. The riparian vegetation communities listed below potentially support jurisdictional aquatic resources under federal and/or state regulations. Riparian vegetation communities associated with aquatic resources are assumed to be under the jurisdiction of CDFW pursuant to Section 1602 of the CFGC.

- Willow riparian
- Red alder riparian

Refer to the vegetation community descriptions in Section 5.1 for the occurrence and description of riparian habitat within the BSA.

5.3.3 Special-Status Plants

Results of USFWS, CNDDB, and California Native Plant Society database searches revealed 31 special-status plant species that are known to occur in the BSA region. Of the 31 species, 15 are not expected to occur in the BSA due to the lack of suitable habitat or the presence of very low-quality habitat within or adjacent to the BSA, the lack of documented occurrences near the BSA, and/or the site being outside of the species' known geographic or elevation range. The remaining 16 species that have potential to occur in the BSA are summarized in Table 4. Habitat descriptions and occurrence information for these species are presented in Appendix E. Refer to Figure 7, CNDDB Occurrences, for special-status plants documented within 5 miles of the BSA. No critical habitat has been designated for federally listed plant species within the BSA.

Table 4. Special-Status Plants with a Potential to Occur in the BSA

Scientific Name	Common Name	Status (Fed/State/CRPR)	Bloom Period	Preferred Habitat Type		
				Conifer Forest	Meadows, Grassland	Aquatic/ Riparian
Cardamine angulata	seaside bittercress	None/None/2B.2	(Jan) Mar–Jul	X		X
Carex arcta	northern clustered sedge	None/None/2B.2	Jun–Sep	X		X
Carex leptalea	bristle-stalked sedge	None/None/2B.2	Mar–July			X
Carex lyngbyei	Lyngbye's sedge	None/None/2B.2	Apr–Aug			X
Erythronium revolutum	coast fawn lily	None/None/2B.2	Mar–Jul (Aug)	X		X
Fissidens pauperculus	minute pocket moss	None/None/1B.2	N/A	X		
Gilia capitata ssp. *pacifica*	Pacific gilia	None/None/1B.2	Apr–Aug		X	
Lilium occidentale	western lily	FE/SE/1B.1	Jun–Jul	X		X
Montia howellii	Howell's montia	None/None/2B.2	(Feb) Mar–May	X		X
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	None/None/1B.1	Apr–Jul	X		X
Packera bolanderi var. *bolanderi*	seacoast ragwort	None/None/2B.2	(Jan–Apr) May–Jul (Aug)	X		
Piperia candida	white-flowered rein orchid	None/None/1B.2	(Mar–Apr) May–Sep	X		
Platismatia lacunosa	crinkled rag lichen	None/None/2B.3	N/A	X		X
Polemonium carneum	Oregon polemonium	None/None/2B.2	Apr–Sep	X		
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	None/None/1B.2	(Mar–Apr) May–Aug	X		
Sidalcea oregana ssp. *eximia*	coast checkerbloom	None/None/1B.2	Jun–Aug	X		X

Notes: BSA = biological study area; CRPR = California Rare Plant Rank; N/A = not applicable.
Status Legend
Federal
FE: Federally listed as endangered
State
SE: State listed as endangered

CRPR
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Threat Rank
0.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

5.3.4 Special-Status Wildlife

Results of the USFWS, NOAA Fisheries, and CNDDB database searches revealed 35 state and/or federal protected special-status wildlife species that are known to occur in the BSA region. Of these 35 species, 5 are not expected to occur due to the lack of suitable habitat or the presence of very low-quality habitat within or adjacent to the BSA, the lack of documented occurrences near the BSA, or due to the site being outside of the species' known geographic or elevation range. These species are identified in Appendix F, Special-Status Wildlife Species Potential to Occur, but not addressed further in this report. The remaining 30 species have potential or are known to occur in the BSA and are discussed further below. Refer to Figure 7, CNDDB Occurrences, for special-status wildlife species documented within 5 miles of the BSA.

5.3.4.1 Invertebrates

The BSA contains potentially suitable habitat for one special-status invertebrate species: western bumble bee (*Bombus occidentalis*). This species is listed as a candidate species under CESA and is discussed in further detail below.

Western Bumble Bee

Western bumble bee is a native California bee that is a generalist forager known to occur in meadows, grasslands, chaparral, scrubland, and urban parks and gardens with abundant floral resources. In California, it has been documented in Alameda, Alpine, Butte, Calaveras, Contra Costa, Del Norte, El Dorado, Fresno, Humboldt, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sen Benito, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Tehama, Trinity, Tulare, Yolo, and Yuba Counties (Xerces Society 2018). This species forages for nectar on a variety of species, including *Ceanothus*, *Centaurea*, *Chrysothamnus*, *Cirsium*, *Geranium*, *Grindelia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium* spp. This species typically nests in underground cavities in open, west-southwest–facing slopes bordered by trees. Thus, suitable habitat generally includes nesting sites for colonies; nectar and pollen resources available through spring, summer, and fall; and suitable overwintering sites (Xerces Society 2018).

Open canopy vegetation communities in the BSA, including the annual grass and disturbed alder riparian communities, contain potentially suitable habitat for western bumble bee. Additionally, the BSA provides floral resources suitable for pollination such as California bee plant (*Scrophularia californica*). There is one CNDDB record of this species overlapping the BSA (CDFW 2025a). There are no recent Bumble Bee Watch records of this species within 5 miles of the BSA (Bumble Bee Watch 2025). At least two species of bumble bees were observed during the April 30, 2025, reconnaissance survey.

5.3.4.2 Fish

The BSA contains potentially suitable habitat for seven federally and/or state-listed species:

- North American green sturgeon (*Acipenser medirostris* pop. 1) – southern distinct population segment (DPS)
- Coho salmon (*Oncorhynchus kisutch*) – Southern Oregon–Northern California Coast Evolutionarily Significant Unit (ESU)
- Steelhead (*Oncorhynchus mykiss irideus* pop. 48) – Northern California DPS, Central California Coast DPS, and summer run

- Chinook salmon (*Oncorhynchus tshawytscha*) – California Coastal ESU
- Pacific eulachon (*Thaleichthys pacificus*) – Southern DPS

Information on the status, habitat requirements, and occurrences in or near the BSA for the above-listed fish species is provided below.

North American Green Sturgeon (Southern DPS)

On April 7, 2006, NOAA Fisheries listed the southern DPS of the North American green sturgeon as threatened under the ESA. The southern DPS includes individual reproductive populations south of the Eel River in the BSA region. The populations north of the Eel River, grouped as the northern DPS, currently do not warrant listing.

Green sturgeon are found in the lower reaches of large rivers, including the Sacramento–San Joaquin River basin and in the Eel, Mad, Klamath, and Smith Rivers. The green sturgeon is a primitive, bottom-dwelling fish found from Ensenada, Mexico, to the Bering Sea and Japan (Wang 1986). It is characterized by its large size (up to 7 feet long and 350 pounds), a long round body, and "scutes," or plates along dorsal and lateral sides. It is known to migrate up to 600 miles between freshwater and saltwater environments and is commercially caught in the Columbia River and along the Washington coastline. Very little is known about the life history of the green sturgeon relative to other fish species. It is an anadromous fish that spends most of its life in salt water and returns to spawn in freshwater. It is slow growing and late maturing and may spawn as little as every 4 to 11 years. Individuals congregate in the bays of these systems in summer, while some may travel upstream to spawn in spring and summer.

Spawning occurs in the lower reaches of large rivers with swift currents and large cobble. Adults broadcast spawn in the water column and fertilized eggs sink and attach to bottom substrate until they hatch (71 FR 17757–17766). Flow has been identified as the key determinant to larval survival; therefore, water diversions and low dam releases may negatively impact green sturgeon survival rates (71 FR 17757–17766). Juveniles feed on algae and small invertebrates and migrate downstream before they enter their third year of life. They may remain in the estuary for a short time before entering the ocean to feed on benthic invertebrates and fish.

Critical Habitat

The BSA does not contain critical habitat designated for the southern DPS of the North American green sturgeon.

Coho Salmon (Southern Oregon–Northern California Coast ESU)

The Southern Oregon–Northern California Coast ESU of coho salmon occurs within the BSA (north of the Mattole River). On May 6, 1997, the Southern Oregon–Northern California Coast ESU was listed as threatened under the ESA. On June 28, 2005, NOAA Fisheries subsequently included ESA protections to hatchery-raised coho salmon produced at Iron Gate Hatchery, Trinity River Hatchery, and Cole M. Rivers Hatchery in Oregon as part of the Southern Oregon–Northern California Coast ESU.

California coho salmon typically inhabit small coastal streams and large perennial rivers, such as the Klamath and Eel River systems. Coho Salmon in Northern California coastal streams are typically associated with low-gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile rearing habitat. In the Klamath and Eel Rivers, spawning usually occurs in November and December; throughout California, spawning generally occurs mainly from November to January, although it can extend into February or March (Moyle 2002).

Perennial creeks, larger streams and rivers, and estuaries throughout the BSA may provide suitable habitat for coho salmon. Estuaries, including the Humboldt Bay, provide a holding area for adults prior to the upstream migrations, and juveniles could use estuaries for rearing and smoltification (the physiological adaptation that juvenile salmonids undergo to tolerate saline waters).

Critical Habitat

Critical habitat for the Southern Oregon–Northern California Coast ESU of coho salmon was designated on May 5, 1999 (64 FR 24049–24062). Critical habitat for the Southern Oregon–Northern California Coast ESU consists of accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon. The primary constituent elements (PCEs) of critical habitat for both ESUs include, but are not limited to, "spawning sites, food resources, water quality and quantity, and riparian vegetation" (64 FR 24049–24062).

The BSA does not contain critical habitat designated for the Southern Oregon–Northern California Coast ESU of coho salmon.

Essential Fish Habitat

Within the BSA, EFH for coho salmon includes the Eel River.

Steelhead (Northern California DPS, Central California Coast DPS)

Two DPSs of steelhead occur within the BSA, the Northern California steelhead DPS, which includes all naturally spawning populations in California coastal river basins from Redwood Creek (Humboldt County) to the Gualala River (Mendocino County), and the Central California Coast steelhead DPS, which ranges from the Russian River (Sonoma County) south to Aptos Creek (Santa Cruz County). Both the Northern California and Central California Coast DPSs were listed as threatened under the ESA in 1998.

Steelhead generally migrate farther into tributaries and headwater streams than salmon, where cool, well-oxygenated water is available year-round. Northern California steelhead typically enter freshwater streams, estuaries, and rivers between September and March, with spawning peaking between December and early April. Adults typically spend up to 2 years in freshwater locations and 1 year in the ocean prior to returning to spawn. Steelhead may be able to spawn more than once in some smaller coastal watersheds due to the relatively short migration from the ocean to suitable spawning habitat. Newly emerged steelhead fry move to shallow, protected areas along streambanks and then to faster, deeper areas of the river as they grow. Juvenile steelhead feed on a variety of aquatic and terrestrial insects and other small invertebrates. Juvenile steelhead rear throughout the year and may spend 1 to 3 years in freshwater before emigrating to the ocean. Smoltification occurs in juveniles as they begin their downstream migration. Smolting steelhead generally migrate from March to June.

The Eel River and perennial creeks within the BSA may provide suitable habitat for steelhead. Several juvenile salmonids were observed in a small creek within the BSA during the April 30, 2025, field survey; species determination was not confirmed.

Critical Habitat

Critical habitat for both the Northern California DPS and Central California Coast DPS of steelhead was designated on September 2, 2005 (70 FR 52488–52627), including approximately 8,935 linear miles of riverine habitat and 470 square miles of estuarine habitat between the two DPSs. The PCEs of critical habitat for both DPSs include,

but are not limited to, “spawning sites, food resources, water quality and quantity, and riparian vegetation” (NOAA Fisheries 2005).

Essential Fish Habitat

Within the BSA, EFH for the Northern California DPS includes the Eel River.

Steelhead (Summer Run)

Summer-run steelhead in Northern California is a state-listed endangered species that spawns in higher-gradient coastal streams and tributaries south to the Middle Fork Eel River. This run of steelhead occurs within the range of the Klamath Mountains Province and Northern California DPSs, which include all naturally spawning populations in the Klamath River basin and streams north to the Elk River, including the Smith River in California and Rogue River in Oregon, and California coastal river basins from Redwood Creek in Humboldt County to the Gualala River in Mendocino County. Summer-run steelhead prefers cool, swift, shallow water and clean loose gravel for spawning, and large, cool pools during the summer months. Spawning occurs in the upstream reaches of rivers and streams not normally occupied by fall- or winter-run steelhead (Moyle et al. 2015).

Summer-run steelhead typically enter rivers as immature in spring between April and June. Maturing takes place over several months in deep pools with subsurface flow and consistently cool temperatures during low-flow periods. After maturing, steelhead typically spawn following the winter rains between December and February. Fry are assumed to migrate downstream soon after emergence due to the seasonal nature of spawning habitat in the upper stream reaches. After spawning, adult steelhead generally return to the ocean around March. Juvenile steelhead spend time in their natal streams between April and June, then forage and grow in estuaries before migrating to the ocean (CalTrout 2022; Moyle et al. 2015).

The Eel River and perennial creeks within the BSA may provide suitable habitat for steelhead. There is a CNDDB occurrence of summer-run steelhead in the Van Duzen River within 5 miles of the BSA (CDFW 2025a). Several juvenile salmonids were observed in a small creek within the BSA during the April 30, 2025, field survey; species determination was not confirmed.

Chinook Salmon (California Coastal ESU)

The California Coastal ESU of Chinook salmon includes all naturally spawned Chinook salmon originating from south of the Klamath River to and including the Russian River. The California Coastal ESU was originally listed as a threatened species under the ESA in 1999 (64 FR 50394–50415). In 2005, NOAA Fisheries listed several small hatchery stocks that are associated with the ESU (70 FR 37160–37204) following a reassessment of its status.

California Coastal ESU Chinook salmon are fall-run salmon that typically return to their natal rivers to spawn between September and early November. Fall migrations often follow early winter storms, and many adults will hold in estuaries prior to migrating upstream. Spawning in the larger watersheds typically peaks between late October and December. Most California Coastal Chinook salmon juveniles emerge from their redds in the late winter or spring and migrate downstream within a few months. Smolts use food-rich tidal or flooded habitats with overhanging cover or undercut banks to forage before migrating out to the ocean where they mature for 2–3 years before returning to spawn.

The Eel River and perennial creeks within the BSA may provide suitable habitat for Chinook salmon. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025a). Several juvenile salmonids were observed in a small creek within the BSA during the April 30, 2025, field survey; species determination was not confirmed.

Critical Habitat

Critical habitat for the California Coastal ESU of Chinook salmon was designated September 2, 2005 (63 FR 11482–11520). Critical habitat for the California Coastal ESU of Chinook salmon includes accessible reaches of all rivers (including estuarine areas and tributaries) between Redwood Creek at Orick, California, south to, and including, the Russian River. The PCEs of critical habitat for the California Coastal ESU of Chinook salmon include (1) freshwater spawning sites with water quantity and quality conditions and substrate suitable for spawning, incubation, and larval development; (2) freshwater rearing sites with appropriate water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility, forage supporting juvenile development, and natural cover, such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival; (3) accessible freshwater migration corridors with appropriate water quantity and conditions, and natural cover (see above); and (4) accessible estuaries with appropriate water quality, quantity, and salinity conditions, natural cover, and foraging resources, such as aquatic invertebrates and fishes.

Within the BSA, critical habitat for the California Coastal ESU of Chinook salmon includes the Eel River.

Essential Fish Habitat

Within the BSA, EFH for the California Coastal ESU of Chinook salmon includes the Eel River.

Pacific Eulachon (Southern DPS)

The Pacific eulachon Southern DPS is a threatened species under the ESA that lives along the northwest coast of the United States and Canada (NOAA Fisheries 2011). Eulachon have been documented historically in Humboldt Bay and the current southern extent of the species is thought to be the Mad River north of the BSA.

Eulachon are small anadromous fish that typically spend up to 3 to 5 years at sea before returning to lower extents of freshwater coastal rivers to spawn. Spawning normally occurs from late winter to mid-spring. Migrating fish rarely travel more than 39 feet upstream, although spawning has been documented more than 525 feet upstream of the Columbia River. Adults move along the bottom of estuarine and river channels and shallow edge water habitat. Spawning occurs at night in moderate water velocities in pea-size gravel or gravel mixed with sand, wood, and miscellaneous debris (Moyle 2002).

The Eel River estuary provides suitable habitat for eulachon; however, there is a very low likelihood for the species to occur because it is so rare at the southern limit of its range. There are no CNDDB occurrences of this species within 5 miles of the BSA.

Critical Habitat

NOAA Fisheries listed the Southern DPS of eulachon (populations in Washington, Oregon, and California) as threatened under the ESA in March 2010 and designated critical habitat for the species in October 2011. In California, the only designated critical habitat is the Mad River estuary and watershed (NOAA Fisheries 2011).

No critical habitat for Pacific eulachon is present within the BSA.

Other Special-Status Fish Species

The BSA contains potentially suitable habitat for three other non-listed special-status fish species:

- Pacific lamprey (*Entosphenus tridentatus*)
- Western brook lamprey (*Lampetra richardsoni*)
- Coast cutthroat trout (*Oncorhynchus clarkii clarkii*)

Information on the remaining non-listed special-status fish species is provided in Appendix F.

5.3.4.3 Amphibians

The BSA contains potentially suitable habitat for four special-status amphibian species, none of which is a federally or state-listed species:

- Pacific (coastal) tailed frog (*Ascaphus truei*)
- Foothill yellow-legged frog (*Rana boylii*)
- Northern red-legged frog (*Rana aurora*)
- Southern torrent salamander (*Rhyacotriton variegatus*)

Pacific (Coastal) Tailed Frog

Pacific (coastal) tailed frog is an SSC that occurs in low-temperature perennial streams within coniferous forest and mixed hardwood–conifer habitats from near sea level to 6,500 feet amsl. Seasonal (intermittent) drainages are not suitable for pacific tailed frog. This species is largely restricted to the streambed during the dry season but has been observed up to 40 feet from the stream during or immediately following rain events. Most pacific tailed frog populations occur in regions that receive more than 40 inches of annual rainfall. Submerged rocks and logs and streamside boulders and woody debris are important for cover (CDFW 2025c).

Perennial drainages in the BSA provide suitable habitat for pacific tailed frog. There is one documented occurrence of pacific tailed frog within 5 miles of the BSA (CDFW 2025a). There are no iNaturalist records of this species within 5 miles of the BSA; however, there are records of this species in tributaries to the Eel River (iNaturalist 2025).

Foothill Yellow-Legged Frog

Foothill yellow-legged frog in the BSA region (northwest/north coast clade) is an SSC known to occupy rocky streams in a variety of habitats, such as valley–foothill hardwood, mixed coniferous forest, riparian, coastal scrub, and chaparral. Foothill yellow-legged frogs require shallow, flowing water, preferably in small to moderate sized streams with at least some cobble-sized substrate. During periods of inactivity, this species seeks cover under rocks in or immediately adjacent to the stream. Breeding commences at the end of spring flooding, from late March to early June depending on local water conditions and lasts about 2 weeks. Females deposit eggs to gravel or rocks in moving water near stream margins. Eggs hatch in about 5 days, and metamorphosis occurs between July and September. Water is required for at least 3 or 4 months to complete development. This species is rarely encountered far from permanent water sources and does not typically travel overland between waterways (CDFW 2025c, 2025d).

The Eel River and rocky-bottomed intermittent and perennial drainages in the BSA provide suitable habitat for the foothill yellow-legged frog. There are 18 CNDDB records of this species within 5 miles of the BSA (CDFW 2025a).

Northern Red-Legged Frog

Northern red-legged frog is an SSC found in moist coniferous forest, riparian areas, coastal terraces, and floodplains in the Coast Ranges from southern Mendocino County to Del Norte County. The northern red-legged frog shares a narrow overlap in their geographic range with California red-legged frog (*Rana draytonii*) in southern Mendocino County near Navarro Point (Thomson et al. 2016; CDFW 2025a). Otherwise, northern red-legged frog is typically found north of the Navarro River watershed (CDFW 2025a). This species is normally found at elevations from near sea level up to approximately 985 feet amsl but has been detected at elevations over 2,600 feet amsl in Humboldt County (Thomson et al. 2016).

Northern red-legged frogs breed between December and April in perennial and seasonal aquatic habitats with emergent vegetation, including ponds, lakes, slow-moving streams, and drainage ditches. Dense vegetation and downed woody debris in the surrounding uplands provide cover during the non-breeding season. A majority of northern red-legged frogs bask or use cover within 16 feet of water, but they may utilize similar habitat up to approximately 260 feet away (Thomson et al. 2016).

Seasonal and perennial aquatic resources in the BSA provide suitable habitat for the northern red-legged frog. There are nine CNDDB records of this species within 5 miles of the BSA (CDFW 2025a). In addition, multiple adult northern red-legged frogs were observed in a small stream (NWW-02) within the BSA during the field survey on April 30, 2025.

Southern Torrent Salamander

Southern torrent salamander is an SSC that normally occurs in well-shaded streams within mature coastal forests from northwestern California to Mendocino County near Point Arena (CDFW 2025c). This species is primarily aquatic but has been found in streamside forest and riparian habitat during the wet season. Although breeding may occur throughout much of the year, oviposition is thought to peak in August and September, with offspring hatching approximately 8 months later. Perennial streams with cold water temperatures and loose bed substrate (i.e., a mix of gravel and cobble) are considered key habitat requirements for this species due to their high sensitivity to desiccation and fine sediment load (Thomson et al. 2016).

Perennial streams in the BSA provide suitable habitat for southern torrent salamander. There are no CNDDB or iNaturalist records of this species within 5 miles of the BSA (CDFW 2025a; iNaturalist 2025).

5.3.4.4 Reptiles

The BSA contains potentially suitable habitat for one special-status reptile species, which is currently proposed for federal listing: northwestern pond turtle (*Actinemys marmorata*).

Northwestern Pond Turtle

Northwestern pond turtle is an SSC and is federally proposed for listing as a threatened species. Recently, the western pond turtle was split into two species: the northwestern pond turtle and the southwestern pond turtle (*Actinemys pallida*). The BSA occurs within the range of the northwestern pond turtle. This species is highly aquatic

and may occupy rivers and streams, permanent lakes, ponds, and marshes, as well as semi-permanent or ephemeral features when inundated. This species prefers areas with cover from predators, such as vegetation and algae, as well as basking sites for thermoregulation. Adults tend to favor deeper, slow-moving water, whereas hatchlings search for slow and shallow water that is slightly warmer. Northwestern pond turtles spend a majority of the warmer months (April through September) in aquatic habitats that provide favorable environments for foraging, mating, basking, and predator avoidance (Germano and Rathbun 2008; CDFW 2025c).

Northwestern pond turtles use terrestrial habitats for nesting and overwintering. They normally lay their eggs close to water; however, females may climb hillsides along foothill streams, sometimes traveling more than 330 feet to find a suitable nest site. Generally, 3 to 11 eggs are laid from March to August depending on local conditions and are incubated for approximately 73 to 80 days. Although nesting sites should contain deep soils (at least 4 inches deep), the type of soil can vary from sandy to very hard (CDFW 2025c).

Northwestern pond turtle has potential to occur in the Eel River in the BSA. The Eel River provides potentially suitable aquatic habitat, and the surrounding grasslands provide potentially suitable nesting and dispersal habitat. The BSA is within the range of the species, and there are five CNDDB records of the species within 5 miles of the BSA (CDFW 2025a). There are no iNaturalist records of the species within 5 miles of the BSA; however, there are several along the Eel River (iNaturalist 2025). No northwestern pond turtles were observed in the BSA during the April 2025 field survey.

5.3.4.5 Birds

The BSA contains potentially suitable habitat for 28 special-status bird species, including the following 5 federally and/or state-listed species:

- Tricolored blackbird (*Agelaius tricolor*)
- Bank swallow (*Riparia riparia*)
- Northern spotted owl (*Strix occidentalis caurina*)
- Western snowy plover (*Charadrius nivosus nivosus*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Information on the status, habitat requirements, and occurrences in or near the BSA for the above-listed bird species is provided below.

Tricolored Blackbird

The tricolored blackbird is almost endemic to California, with only small, localized nesting areas in Oregon, Washington, Nevada, and coastal Baja California, Mexico (Beedy 2008). Approximately 99% of tricolored blackbirds occur in California, and approximately 90% of the breeding adults are located in the Central Valley (Beedy 2008). While the vast majority of tricolored blackbirds are permanent residents of California, they make extensive migrations and movements within California (Beedy 2008). Major wintering areas include the Sacramento–San Joaquin River Delta and coastal area, with smaller flocks occurring from Sonoma County south to San Diego County (Beedy 2008). In California, the tricolored blackbird breeds locally west of the Cascade Range, Sierra Nevada, and southeastern deserts from Humboldt and Shasta Counties south to extreme southwestern San Bernardino County, western Riverside County, and western and southern San Diego County (Beedy 2008). The distributional extent of the tricolored blackbird breeding range has remained relatively stable since the 1930s; however, statewide

censuses have shown dramatic declines in tricolored blackbird numbers in the Central Valley, where the largest colonies have been observed (Beedy 2008).

The tricolored blackbird usually breeds in freshwater marshes with dense growths of emergent vegetation dominated by cattails (*Typha* spp.) or bulrushes (*Schoenoplectus* spp.), but breeding colonies also occur in willows (*Salix* spp.), blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* sp.). Some of the largest colonies are in silage and grain fields in the San Joaquin Valley. The tricolored blackbird usually forages in open habitats such as grassland and agricultural areas (rice, alfalfa, irrigated pastures, and grain fields) as well as dairies and feedlots. It may also forage in wet and dry vernal pools, seasonal wetlands, riparian scrub, and open marsh borders. Most foraging occurs within 3.1 miles of colony sites (Beedy 2008).

Marsh habitat adjacent to the cattle pasture in the northern portion of the BSA may provide suitable nesting habitat for tricolored blackbird. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025a). There are no eBird records of this species within 5 miles of the BSA (eBird 2025).

Bank Swallow

Bank swallow is a state-listed threatened species that occurs in riparian, coastal, and other lowland habitats. This species nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured sandy soils. Approximately 75% of the breeding population in California occurs along banks of the Sacramento and Feather Rivers in the northern Central Valley. Other colonies are known from the central coast from Monterey to San Mateo Counties and in northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc Counties. Breeding colonies may contain between 10 and 1,500 nesting pairs, but more typically range from 100 to 200 nesting pairs (CDFW 2025c).

Banks along the Eel River in the northern portion of the BSA may provide suitable nesting habitat for bank swallows. There is one CNDDB record of bank swallow within 5 miles of the BSA (CDFW 2025a).

Northern Spotted Owl

Northern spotted owl is a federally and state-listed species that occupies dense, mixed coniferous forests from southwest British Columbia through the Cascade Mountains and coastal ranges in Washington, Oregon, and California, as far south as Marin County. This species prefers mature and old-growth coniferous forests with multi-layered canopies containing tree species of varying size and age, tree snags, and fallen dead trees. Open space among the lower branches is preferred, to allow for flight below the canopy (USFWS 2012). Narrow steep-sided canyons with north-facing slopes are also preferred as nesting sites (CDFW 2025c).

Northern spotted owls breed from early March through June, with a peak in April and May (CDFW 2025c). Courting usually begins in February or March, followed by egg laying and incubation between March and May. The female broods the new young for approximately 24 to 36 days. Most juvenile owls fledge by August or September and disperse to new territories through November (USFWS 2012).

Conifer forest on the north side of the Eel River at the northern extent of the BSA provides suitable nesting habitat for northern spotted owl. There are dozens of occurrences of northern spotted owl within 5 miles of the BSA, including breeding pairs, juvenile owls, and/or nests (CDFW 2025e).

Critical Habitat

USFWS designated critical habitat for tje northern spotted owl on December 14, 2012 (77 FR 71876–72068). Critical habitat for the species has been revised several times since 2012, with the most recent revision (and the one currently in effect) dated November 10, 2021 (86 FR 62606–62666). The PCEs of critical habitat for northern spotted owl are (1) coniferous forest types that may be in early-, mid-, or late-seral stages and that support the northern spotted owl across its geographic range; (2) nesting and roosting habitat that provide structural features for nesting, protection from adverse weather, and cover to reduce predation risk; (3) foraging habitat, which varies widely across the species' range; and (4) habitat to provide the transience and colonization phases of dispersal. A full description of each PCE, including region-specific forest types and tree species associations, is provided in the December 14, 2012, final rule (77 FR 72051).

The BSA does not contain designated critical habitat for northern spotted owl.

Western Snowy Plover

Western snowy plover is a federally listed species and SSC that nests, feeds, and takes cover on sandy or gravelly beaches along the Pacific coast at sand pits, dune-backed beaches at creek and river mouths, salt pans at lagoons and estuaries, and alkali lakes. Sandy, gravelly, or friable soil substrates are required for nesting. Nesting generally occurs from early March to late September, with incubation lasting approximately 27 days. The federal listing status applies only to the Pacific coast population, which consists of individuals that nest within 50 miles of the Pacific Ocean on the mainland coast, peninsulas, offshore islands, bays, estuaries, or rivers of the United States and Baja California, Mexico (USFWS 2007; CDFW 2025c).

Sandy or gravelly areas along the Eel River bar within the northern portion of the BSA may provide suitable nesting habitat for western snowy plover. There are no CNDDB or eBird records of this species within 5 miles of the BSA (CDFW 2025a; eBird 2025).

Critical Habitat

USFWS designated critical habitat for western snowy plover on March 5, 1993, and revised critical habitat on June 19, 2012 (77 FR 36728–36869). The PCEs of critical habitat for western snowy plover are (1) areas above the daily high tides and below heavily vegetated or developed areas; (2) shoreline habitat with little to no vegetation between the annual low tide or low-water flow and annual high tide or highwater flow, subject to inundation but not regularly inundated; (3) surf- or water-deposited organic debris on open substrates; and (4) minimal disturbance from humans, pets, vehicles, or predators.

The BSA does not contain designated critical habitat for western snowy plover.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo is a federally and state-listed species that requires large blocks of riparian habitat (particularly woodlands with cottonwoods and willows) for nesting. Dense understory is an important factor in nest site selection, and cottonwood trees offer important foraging habitat. Home ranges vary between 25 and 99 acres. In the west, nesting occurs almost exclusively close to water in moist river bottoms, where high humidity levels promote successful hatching and rearing of young. Incubation in California generally commences by mid-June to mid-July and lasts 9 to 11 days, with chicks fledging as early as 6 to 9 days old. This species is uncommon to rare in California and is only known from scattered locations. The western DPS occurs west of the crest of the Rocky Mountains (CDFW 2025c).

Riparian forest within the BSA may provide, but is unlikely to provide, suitable nesting habitat for western yellow-billed cuckoo given the lack of expansive and dense riparian forest preferred by this species. There are no CNDDB or eBird records of this species within 5 miles of the BSA (CDFW 2025a; eBird 2025).

Critical Habitat

USFWS designated critical habitat for western yellow-billed cuckoo on October 3, 2014, and revised critical habitat on April 21, 2021 (86 FR 20798–21005). The PCEs of critical habitat for western yellow-billed cuckoo are (1) cool and humid riparian woodlands with high canopy closure that contain nesting and foraging habitat in contiguous or nearly contiguous patches greater than 325 feet wide extending over 200 acres, (2) adequate prey base during the nesting seasons consisting of large insect fauna and tree frogs, and (3) lower-gradient streams with broad floodplains.

The BSA does not contain designated critical habitat for western yellow-billed cuckoo.

Other Nesting Birds and Raptors

The BSA contains abundant nesting habitat for native bird species protected under the MBTA and CFGC Section 1503, as well as numerous species on the CDFW Special Animals List, including fully protected and watch list species. These species are listed below.

- Golden eagle (*Aquila chrysaetos*)
- Grasshopper sparrow (*Ammodramus savannarum*)
- Bald eagle (*Haliaeetus leucocephalus*)

Golden Eagle

The golden eagle has a holarctic distribution (northern parts of the both the Old World and New World), extending as far south as north Africa, Arabia, the Himalayas, North America, and Mexico. It is a partial migrant within this distribution, with the northern-breeding birds migrating south in winter and those in more temperate climates remaining within breeding territories year-round (Brown and Amadon 1968). In North America, this species breeds locally from northern Alaska eastward to Labrador and southward to northern Baja California and northern Mexico. The golden eagle winters from southern Alaska and southern Canada southward through the breeding range. It ranges from sea level up to 3,833 meters (11,500 feet) amsl (Grinnell and Miller 1944).

The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner et al. 1990). During spring and fall migration in the western United States and Canada, the golden eagle prefers wetlands, agricultural areas, and grassy foothills (Dekker 1985). Its winter range in the western United States includes open habitats with native vegetation, and the eagle avoids urban, agricultural, and heavily forested areas (Millsap 1981; Fischer et al. 1984; Craig et al. 1986; Marzluff et al. 1997). The golden eagle also uses sagebrush communities, riparian areas, grasslands, and rolling oak savannas as habitat (Knight et al. 1979; Fischer et al. 1984; Hayden 1984; Estep and Sculley 1989). This species nests on cliffs with canyons and escarpments and in large trees (generally occurring in open habitats) and is primarily restricted to rugged, mountainous country (Garrett and Dunn 1981; Johnsgard 1990).

Grassland habitat within the cattle pasture in the northern portion of the BSA may provide suitable foraging habitat for golden eagle. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025c). There are multiple eBird records of this species within 5 miles of the BSA (eBird 2025).

Grasshopper Sparrow

Grasshopper is an SSC and a neotropical migrant that breeds throughout the eastern two-thirds of the United States, except for the extreme southeast (Vickery 1996). In the western coastal states, it breeds in eastern Washington, southern Idaho, southwestern Wyoming, and northern Utah, and the western and central portions of California, as well as in southern British Columbia. Grasshopper sparrows winter from California to North Carolina and south through Central America to Costa Rica (Vickery 1996).

Grasshopper sparrows in California breed (and primarily winter) on slopes and mesas containing grasslands of varying compositions (Grinnell and Miller 1944; Garrett and Dunn 1981). Nests are difficult to detect and are composed of grasses and forbs and located in slight depressions in the ground or hidden at the base of an overhanging clump of grasses or forbs (Vickery 1996). Birds observed during the winter in breeding areas may be residents or winter migrants (Unitt 2008). The breeding range of the species in California includes Humboldt, Del Norte, Mendocino, Trinity, and Tehama Counties in the north, areas west of the Cascade and Sierra Nevada ranges, and south to San Diego County (Unitt 2008).

The grasshopper sparrow uses dense, dry, or well-drained grassland, especially native grassland with a mix of grasses and forbs, for foraging and nesting, and requires fairly continuous native grassland areas with occasional taller grasses, forbs, or shrubs for song perches (Garrett and Dunn 1981; Unitt 2008). Grasshopper sparrows tend to avoid grassland areas with extensive shrub cover, and the presence of native grasses is less important than the absence of trees (Smith 1963). They may also occur in fallow agricultural fields, especially those periodically planted with oats and barley.

Grassland habitat within the cattle pasture in the northern portion of the BSA may provide suitable nesting habitat for grasshopper sparrow.

Bald Eagle

Bald eagles typically nest in large trees in forested areas, often in conifers, but also in hardwoods, such as sycamores and oaks (*Quercus* spp.), or on cliff faces (Anthony et al. 1982; USFWS 1986; CDFW 2025a). They usually nest within 2 kilometers (approximately 1.24 miles) of water, often much closer, and generally isolated from human activity and disturbance; they also often nest in one of the largest trees in a stand and in a prominent location providing vistas over the surrounding area (Buehler 2000; USFWS 1986). In winter, bald eagles typically inhabit areas less than 500 meters (1,625 feet) amsl, but may be found up to 2,500 meters (8,125 feet) amsl in some western states (Buehler 2000). They roost communally in stands of both hardwoods and conifers that provide access to foraging habitat and protection from the weather (Anthony et al. 1982).

The quality of foraging habitat associated with large bodies of water depends on such factors as abundance of the fish that bald eagles prey upon; the presence of shallow water such as tidal flats, which may increase the availability of prey; and the level of human disturbance (Buehler 2000; Stalmaster and Kaiser 1998; Watson et al. 1991; Garrett et al. 1993). The presence of suitable perch sites is also an important factor. In addition to being near water with ample prey, perch sites tend to be those that provide good views of the surrounding area and are often the highest site available (USFWS 1986).

The redwood forest habitat in the BSA may provide suitable nesting habitat for bald eagle and the Eel River in the BSA may provide suitable foraging habitat. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025a). There are multiple eBird records of this species within 5 miles of the BSA (eBird 2025).

5.3.4.6 Mammals

The BSA contains potentially suitable habitat for one federally and/or state-listed mammal species: Humboldt marten (*Martes caurina humboldtensis*).

Humboldt Marten

Humboldt marten is federally and state listed as threatened in California. Humboldt marten is a subspecies of the Pacific marten (*M. caurina*), a small carnivorous mammal in the Mustelid family. It is characterized by a long, slender body, dark brown to reddish-brown fur, and a distinctive orange or buff-colored throat patch. Adults typically weigh between 0.7 and 1.3 kilograms (between 1.5 and 2.9 pounds) and measure 50 to 70 centimeters (20 to 28 inches) in total length (Slauson et al. 2019). Historically, this species was distributed throughout coastal forests in northwestern California and southern Oregon; however, it is known from only four small populations: two in Oregon and two in California (85 FR 63806–63831).

Habitat requirements for Humboldt marten include mature coastal coniferous forest composed of species such as coast redwood, Douglas fir, and tanoak with dense understories dominated by shrub species such as salal (*Gaultheria shallon*) and evergreen huckleberry (*Vaccinium ovatum*). Other important habitat features include structural complexity with abundant downed logs, root masses, and snags for denning, thermoregulation, and escape from predators (Slauson et al. 2019). Denning typically occurs in cavities in live trees, logs, snags, and root wads (USFWS 2018).

Redwood forest habitat in the northern portion of the BSA along the Eel River may provide suitable habitat for Humboldt marten. There are three CNDDB records of this species within 5 miles of the BSA (CDFW 2025a).

Roosting Bats

The BSA contains potentially suitable habitat for three special-status bat species:

- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western red bat (*Lasiurus frantzii*)

Information on the status, habitat requirements, and occurrences in or near the BSA for these species is provided in Table 5 as well as in Appendix F.

Human-made structures and buildings as well as trees in the BSA provide suitable habitat for native bats to establish roosts or maternity colonies, including three special-status bat species (Table 5). Native bat colonies are protected under the CFGC and are typically addressed as a biological resource with consideration under CEQA Appendix G (14 CCR 15000 et seq.).

Table 5. Special-Status Bat Species with Potential Roosting Habitat in the BSA

Species	Suitable Land Cover Types	Roost Features
Pallid bat	Grassland, shrubland, woodland, and forest	Rocky outcrops, man-made structures, and trees
Townsend's big-eared bat	Coniferous and deciduous forest, riparian woodland	Limestone caves and lava tubes, man-made structures, tunnels, and large hollowed-out trees
Western red bat	Forest, woodland, riparian, and orchards	Tree canopy

Other Special-Status Mammals

The BSA contains potentially suitable habitat for two additional state special-status mammal species:

- Sonoma tree vole (*Arborimus pomo*)
- Fisher (*Pekania pennanti*)

Information on the status, habitat requirements, and occurrences in or near the BSA for these species is provided below.

Sonoma Tree Vole

Sonoma tree vole is an SSC that occupies mature forests within the fog belt of the North Coast from Sonoma County to the Oregon border. Douglas fir, redwood, and montane hardwood–conifer forests provide suitable nesting and foraging habitat. This species forages on Douglas fir and grand fir (*Abies grandis*) needles, which they use almost exclusively to construct their nests. Dome-shaped nests for reproduction are typically constructed at least 6 feet above ground at the end of branches or on branches close to the trunks of tall trees. Sonoma tree voles typically remain in the nest during the daytime and leave the nest only at night for foraging and other activities (CDFW 2025c).

Redwood forest habitat, especially in the northern portion of the BSA along the Eel River, may provide suitable habitat for Sonoma tree vole. There are seven CNDDB records of this species within 5 miles of the BSA (CDFW 2025a).

Fisher

The fisher is an SSC that occurs in dense forest and riparian habitats in Northern California and the southern Sierra Nevada. This species prefers coniferous or deciduous riparian habitats with intermediate to large trees and closed canopies for denning and resting. Fishers typically den in protected cavities, brush piles, hollow logs, tree snags, and upturned trees. Foraging may occur in younger forest stands, and denning may also occur in these areas if the appropriate habitat characteristics are present (CDFG 2010b).

Closed-canopy forest and riparian habitat in the BSA may provide suitable habitat for fishers. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025a).

5.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the

adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as steppingstones for wildlife dispersal. Because many wildlife species have species-specific habitat requirements for survival and dispersal, corridors may also be species specific. At a minimum, corridors promote local colonization or recolonization of distinct habitat patches and potentially increase genetic variability within and between populations. In addition, increased exposure to an inhospitable urban matrix due to reductions in connectivity can increase general mortality. All these factors can contribute significantly to local species extinctions. Thus, corridors help species populations, distributed in and among habitat patches, to persist over time (CDFW 2025c; Travers et al. 2021).

The BSA has been subject to moderate disturbance from cattle grazing and tree farm timber harvest and thinning for several decades. However, the pasture and riparian forest along the Eel River within the BSA may serve as a corridor linking similar habitat patches from adjacent surrounding rural properties. Native vegetation communities and aquatic resources within the BSA are assumed to support local wildlife movement by small terrestrial wildlife species (e.g., birds, mammals, reptiles, amphibians).

6 Conclusions

The following biological resources constraints were identified as present or having potential to occur in the BSA:

- Sensitive vegetation communities:
  - Redwood forest
  - Red alder riparian
  - Willow riparian
- Jurisdictional aquatic resources:
  - One intermittent channel (NWW-02)
  - One perennial channel – Eel River (NWW-03)
  - One ephemeral channel (NWW-04)
  - One emergent wetland (WET-01)
- Special-status plant species:
  - Seaside bittercress
  - Northern clustered sedge
  - Bristle-stalked sedge
  - Lyngbye's sedge
  - Coast fawn lily
  - Minute pocket moss
  - Pacific gilia
  - Western lily
  - Howell's montia
  - Baker's navarretia
  - Seacoast ragwort
  - White-flowered rein orchid
  - Crinkled rag lichen
  - Oregon polemonium
  - Siskiyou checkerbloom
  - Coast checkerbloom
- Special-status wildlife species:
  - Western bumble bee
  - North American green sturgeon – Southern DPS
  - Coho salmon – Southern Oregon–Northern California Coast ESU
  - Steelhead – Northern California DPS, Central California Coast DPS, and summer run
  - Chinook salmon – California Coastal ESU
  - Pacific eulachon – Southern DPS

  - Pacific lamprey
  - Western brook lamprey
  - Coast cutthroat trout
  - Pacific (coastal) tailed frog
  - Foothill yellow-legged frog
  - Northern red-legged frog
  - Southern torrent salamander
  - Northwestern pond turtle
  - Tricolored blackbird
  - Bank swallow
  - Northern spotted owl
  - Western snowy plover
  - Western yellow-billed cuckoo
  - Golden eagle
  - Grasshopper sparrow
  - Bald eagle
  - Humboldt marten
  - Sonoma tree vole
  - Fisher
- Nesting birds and raptors protected by the MBTA and CFGC Sections 1503 and 3511
- Native roosting bats protected by CFGC Section 4150

Should any future construction/development occur in the BSA, recommended avoidance and minimization measures for the above-listed biological resources will be included in the CEQA document.

7 References

14 CCR 15000–15387 and Appendices A–N. *Guidelines for Implementation of the California Environmental Quality Act, as amended*. https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I86C9BC205B4D11EC976B000D3A7C4BC3&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default).

16 USC 668–668d. Bald and Golden Eagle Protection Act, as amended.

16 USC 703–712. Migratory Bird Treaty Act, as amended.

33 CFR Part 328: Definition of Waters of the United States; Section 328.3: Definitions.

63 FR 11482–11520. Proposed rule: "Proposed Endangered Status for Two Chinook Salmon ESUs and Proposed Threatened Status for Five Chinook Salmon ESUs; Proposed Redefinition, Threatened Status, and Revision of Critical Habitat for One Chinook Salmon ESU; Proposed Designation of Chinook Salmon Critical Habitat in California, Oregon, Washington, Idaho."

64 FR 24049–24062; 50 CFR Part 226. Final rule and correction: "Designated Critical Habitat; Central California Coast and Southern Oregon/ Northern California Coasts Coho Salmon." May 5, 1999.

64 FR 50394–50415. Final rule; notice of determination: "Threatened Status for Two Chinook Salmon Evolutionarily Significant Units (ESUs) in California." September 16, 1999.

66 FR 3853–3856. Executive Order 13186: "Responsibilities of Federal Agencies to Protect Migratory Birds." January 10, 2001.

70 FR 52488–52627. Final rule: "Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California." September 2, 2005.

70 FR 37160–37204. Final rule: "Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs." June 28, 2005.

71 FR 17757–17766; 50 CFR Part 223. Final rule: "Endangered and Threatened Wildlife and Plants; Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon; Final Rule." April 7, 2006.

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77 FR 71876–72068. Final rule: "Designation of Revised Critical Habitat for the Northern Spotted Owl." December 4, 2012.

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85 FR 63806–63831. Final rule: "Threatened Species Status for Coastal Distinct Population Segment of the Pacific Marten With a Section 4(d) Rule." October 8, 2020.

86 FR 20798–21005. Final rule: "Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo." April 21, 2021.

86 FR 62606–62666. Final rule; withdrawal and revision: "Revised Designation of Critical Habitat for the Northern Spotted Owl." November 10, 2021.

86 FR 69372–69450. Proposed rule: "Revised Definition of 'Waters of the United States.'" December 7, 2021.

88 CFR 3004–3144. Final rule: "Revised Definition of 'Waters of the United States'; Conforming." September 8, 2023.

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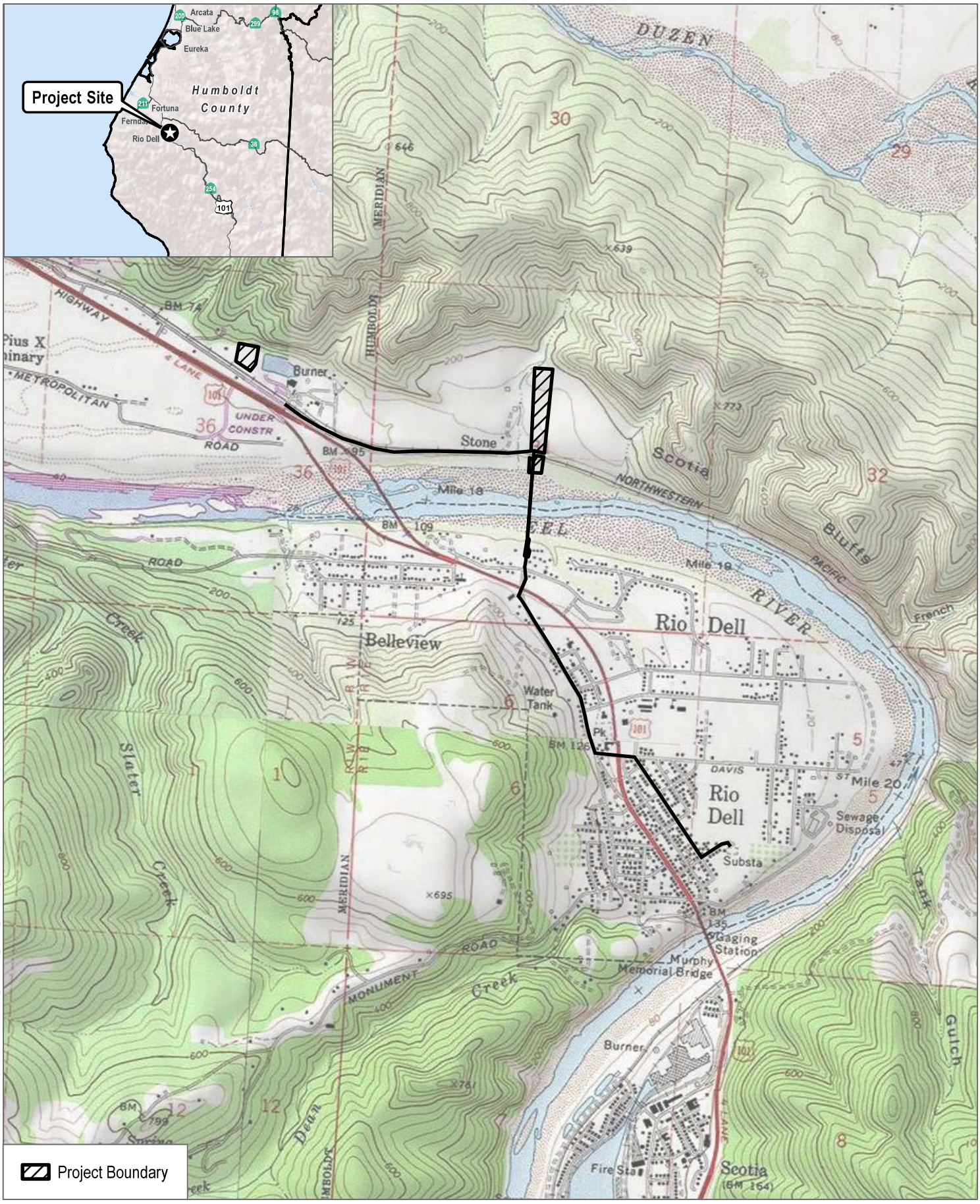

SOURCE: USGS National Map 2025

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FIGURE 1

Project Location

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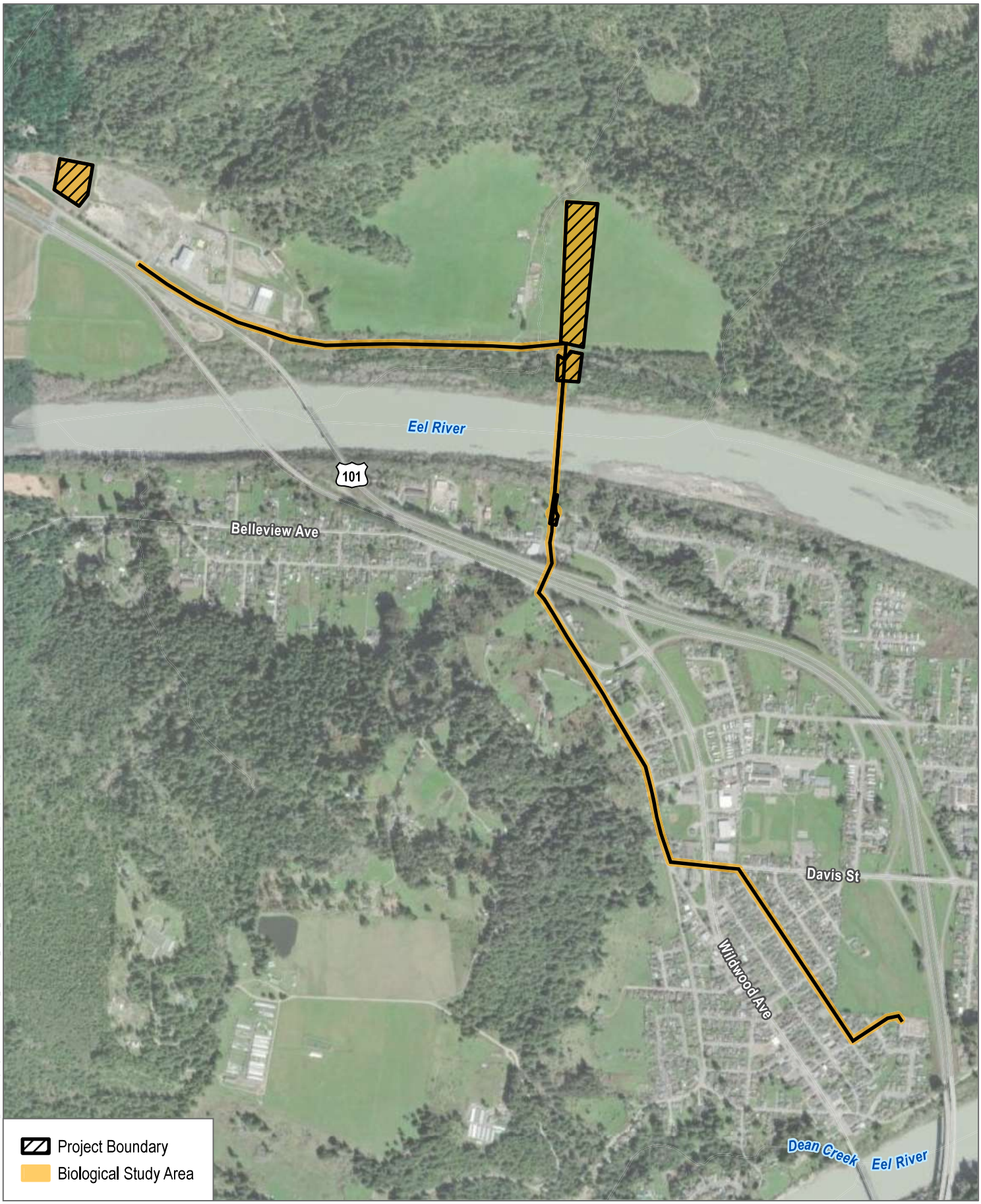

SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 2

Biological Study Area

CSLC Rio Dell Feeder Project

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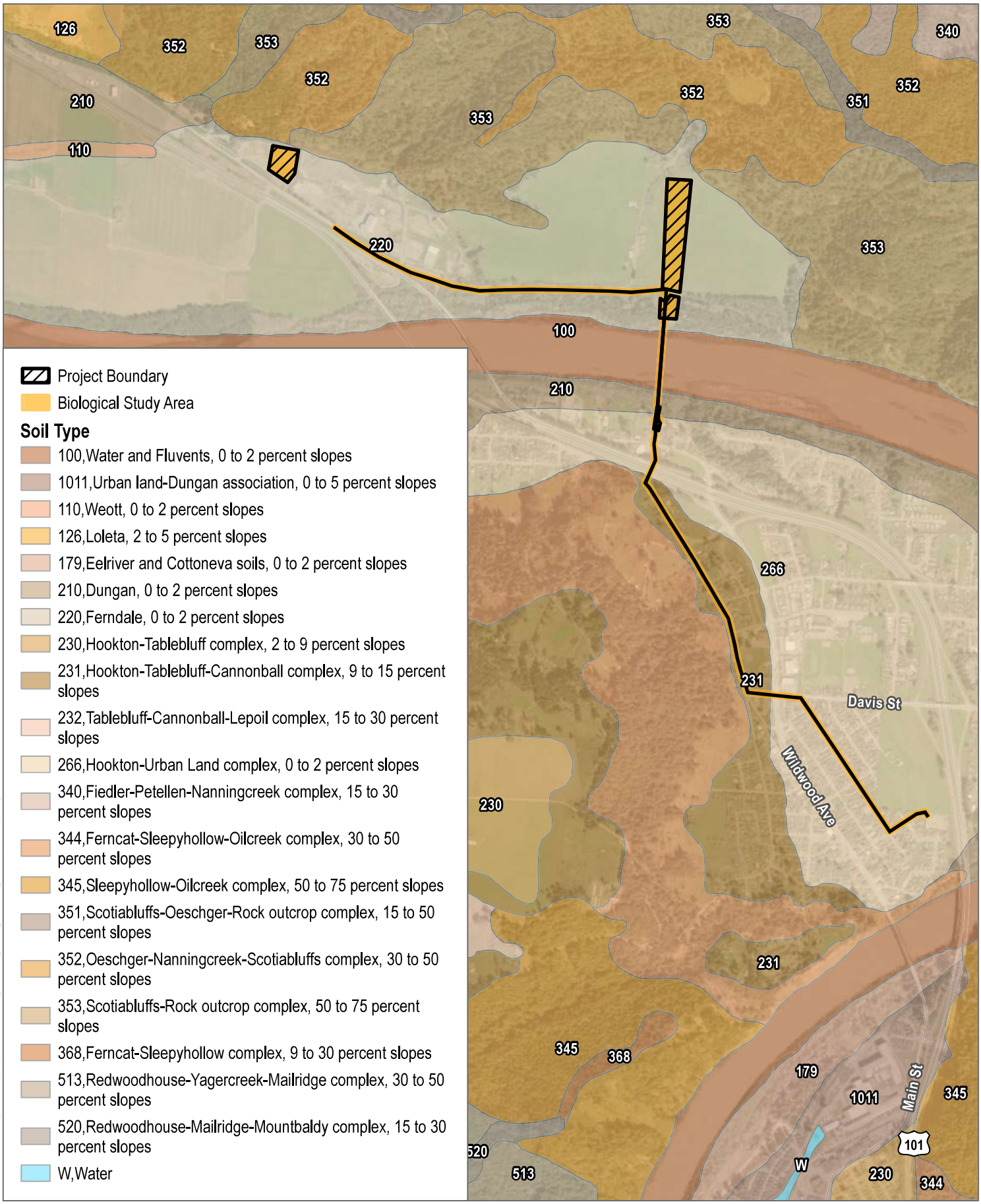

SOURCE: Bing Maps 2024, OpenStreetMap, NHD, NWI

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FIGURE 3

Soils

CSLC Rio Dell Feeder Project

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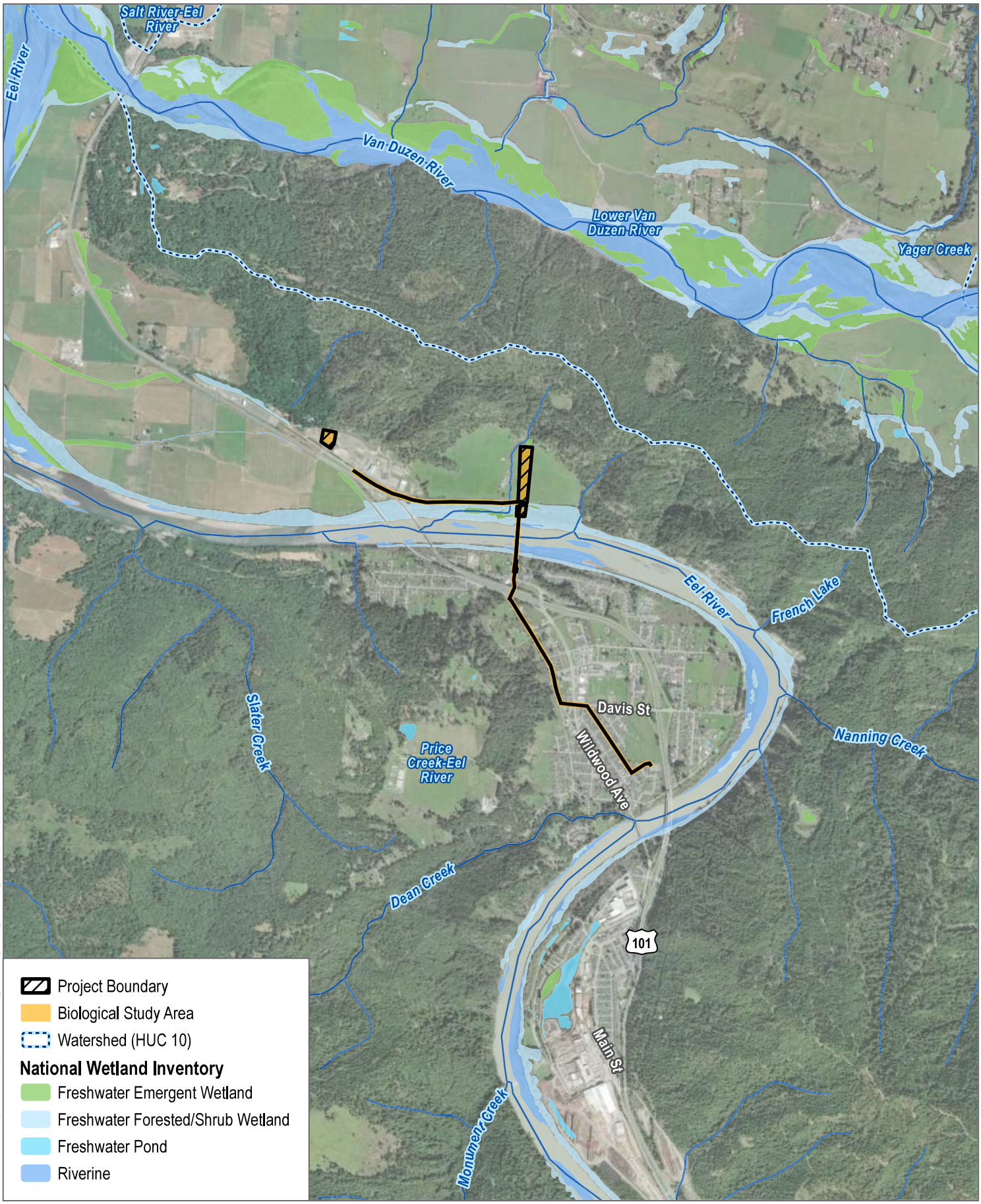

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FIGURE 4

Hydrologic Setting

CSLC Rio Dell Feeder Project

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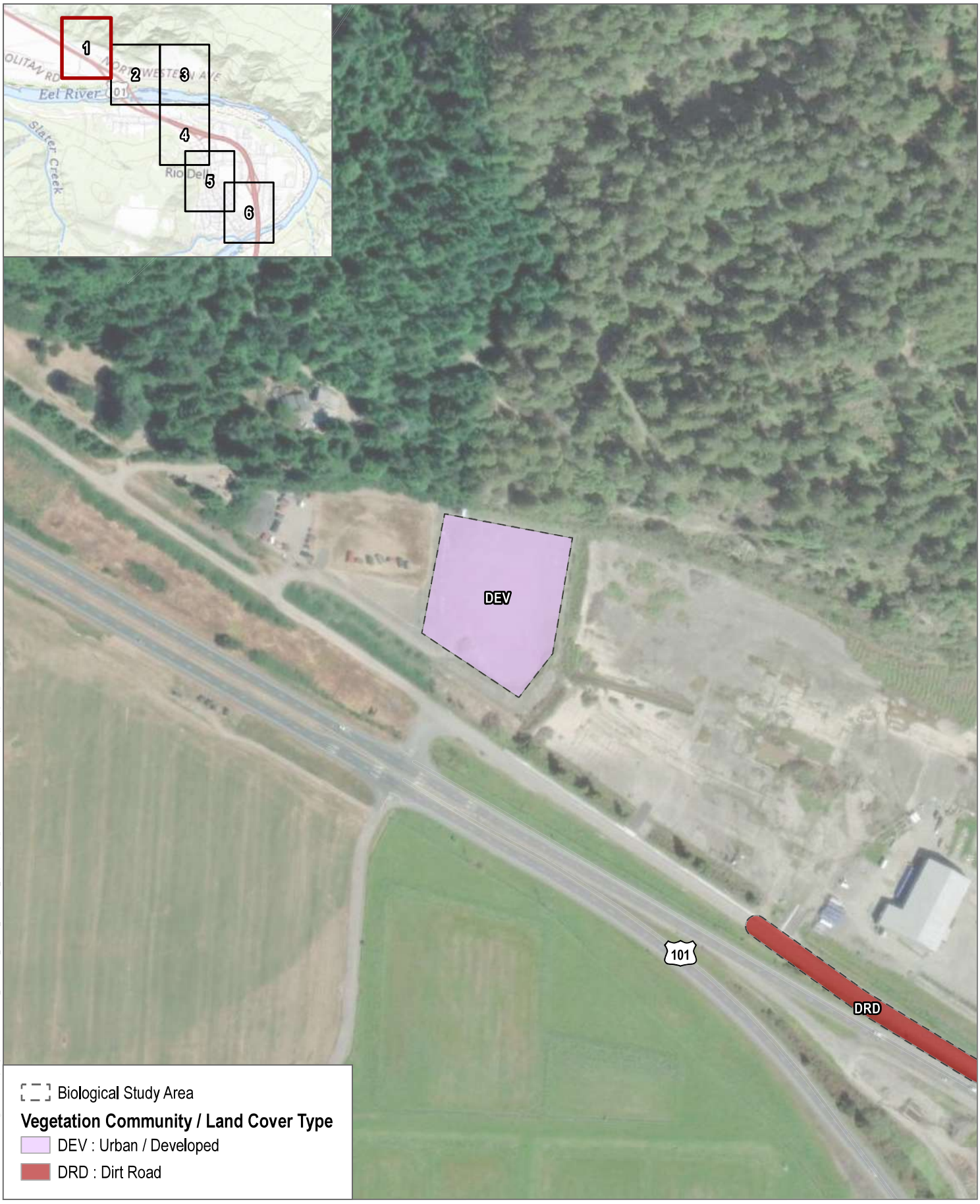

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FIGURE 5-1

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 5-2

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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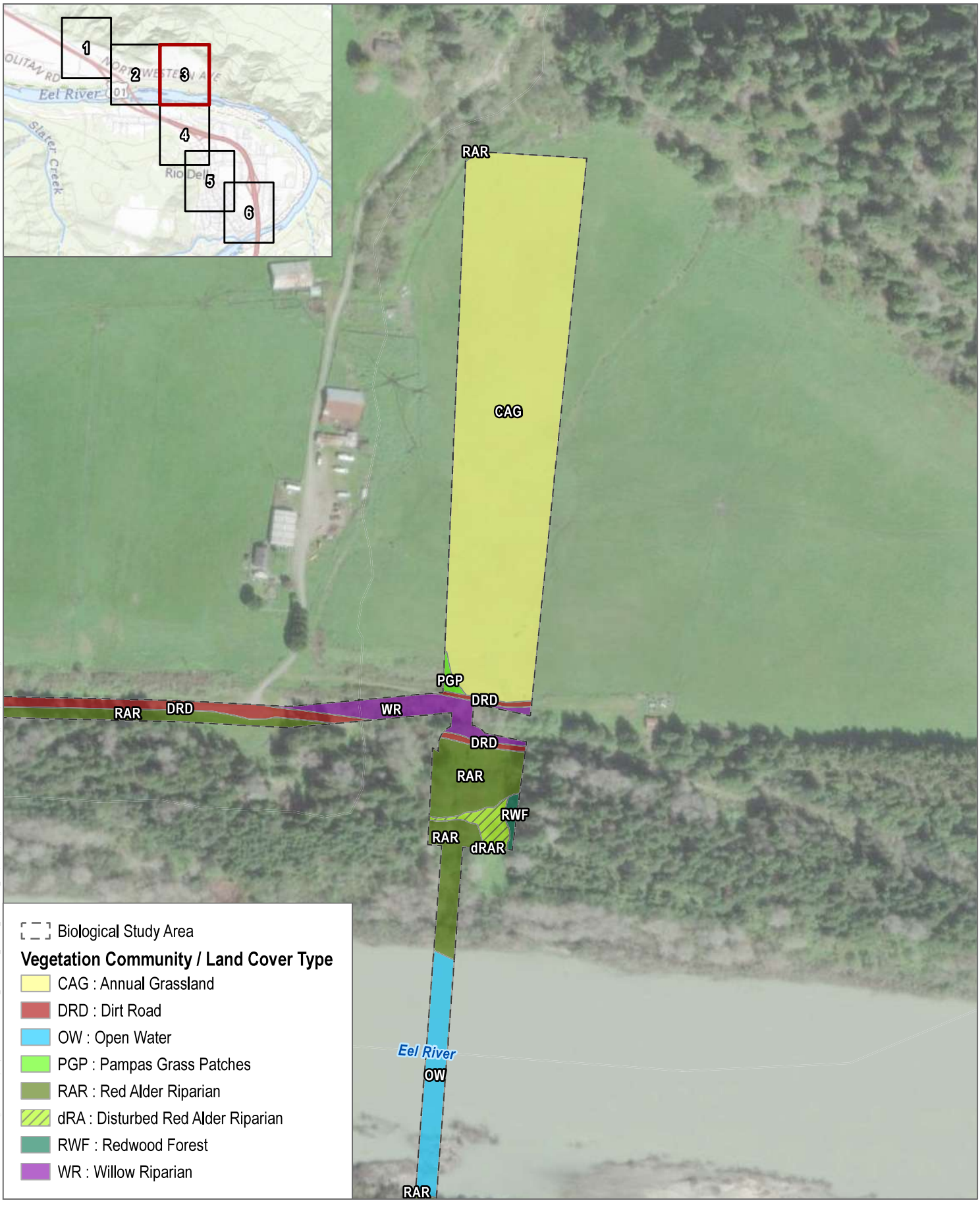

SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 5-3

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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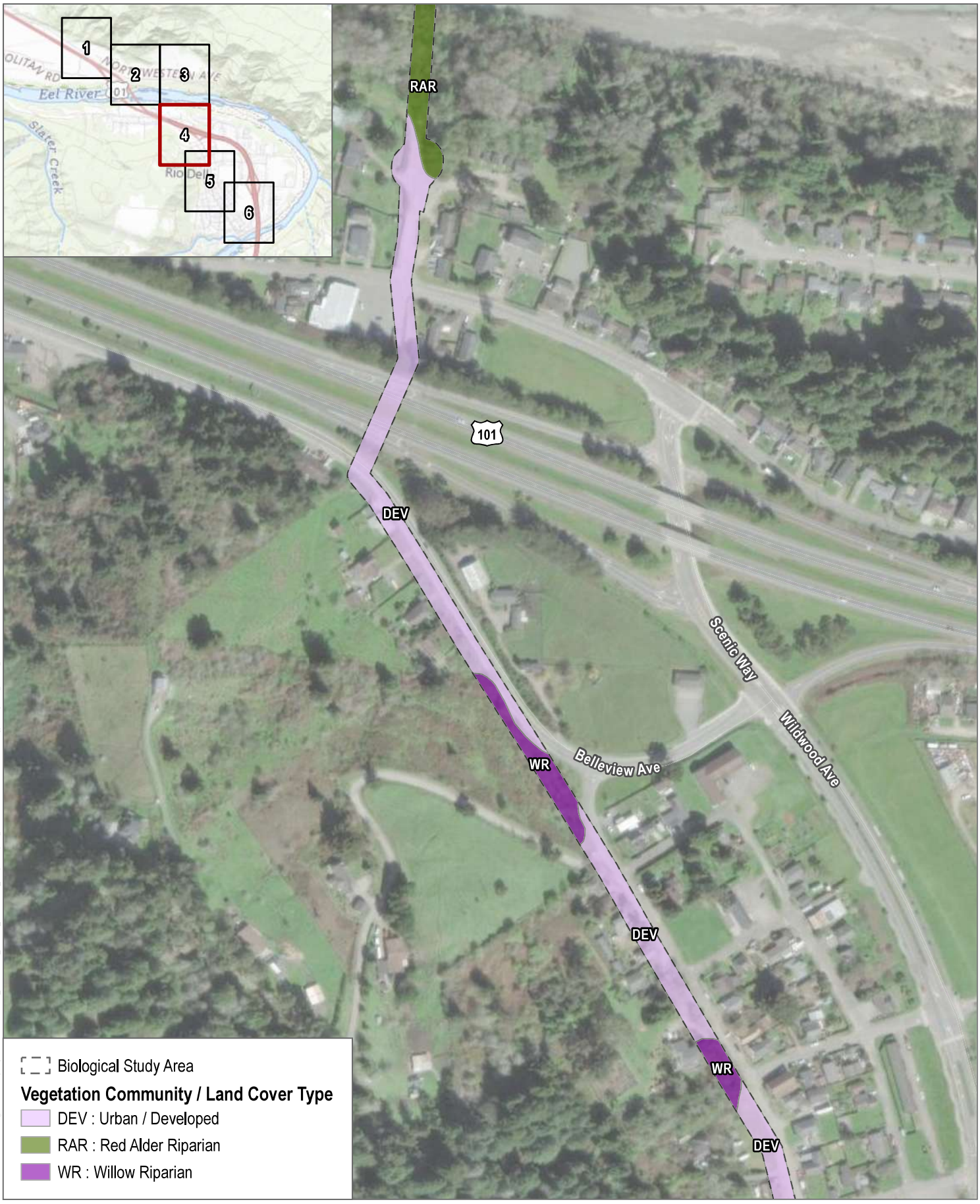

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FIGURE 5-4

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 5-5

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 5-6

Vegetation Communities and Land Cover Types

CSLC Rio Dell Feeder Project

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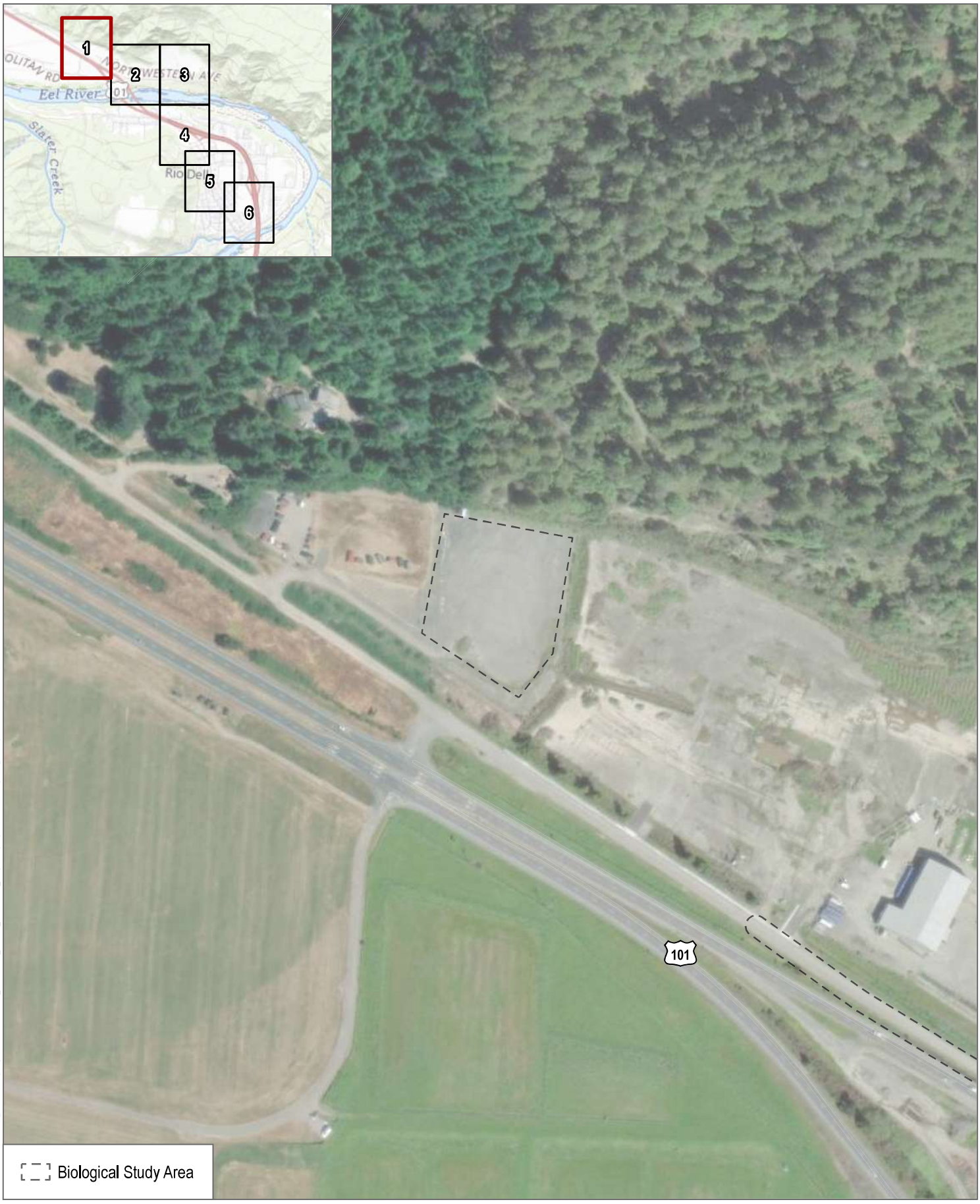

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FIGURE 6-1

Aquatic Resources

CSLC Rio Dell Feeder Project

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SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 6-2

Aquatic Resources

CSLC Rio Dell Feeder Project

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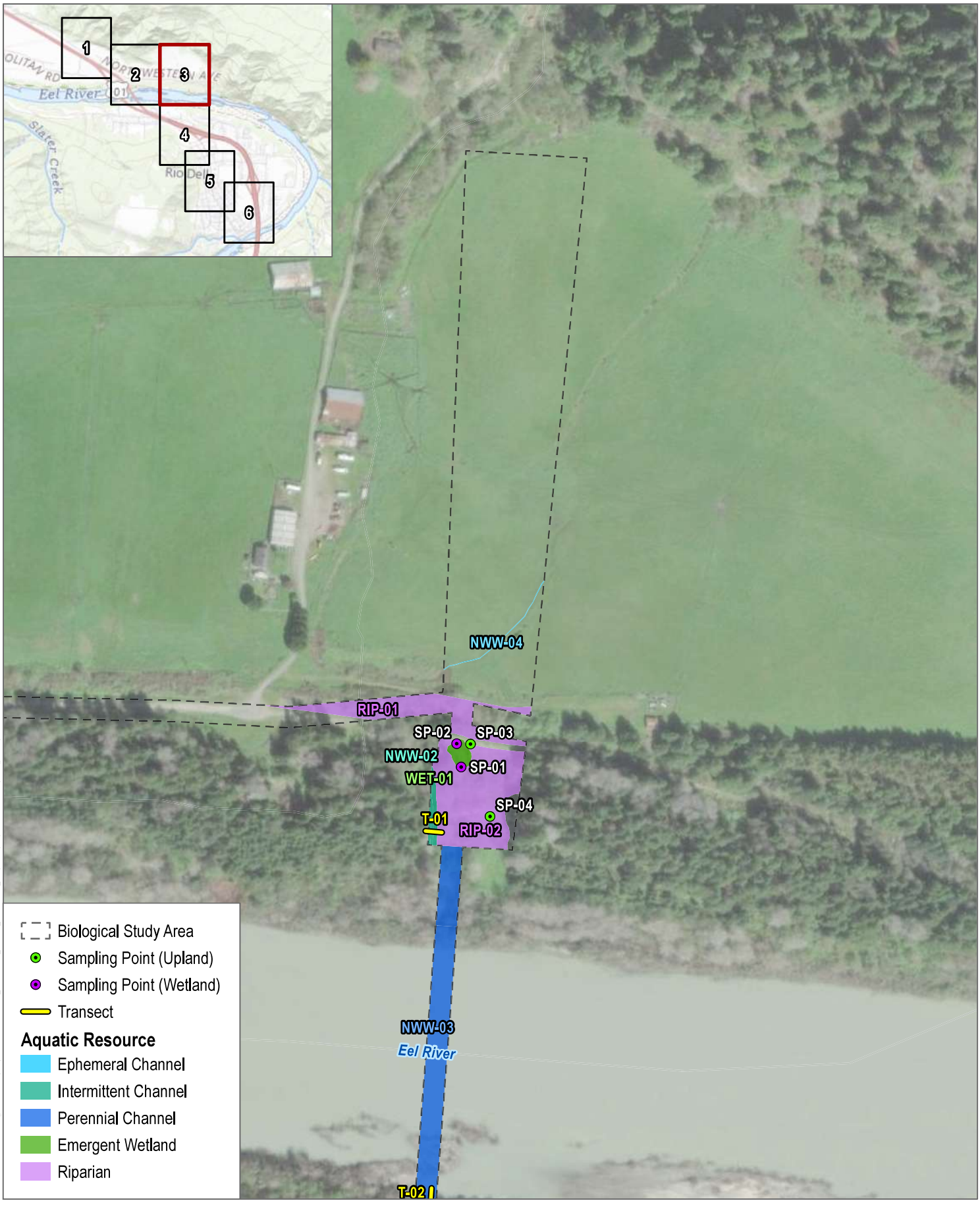

SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 6-3

Aquatic Resources

CSLC Rio Dell Feeder Project

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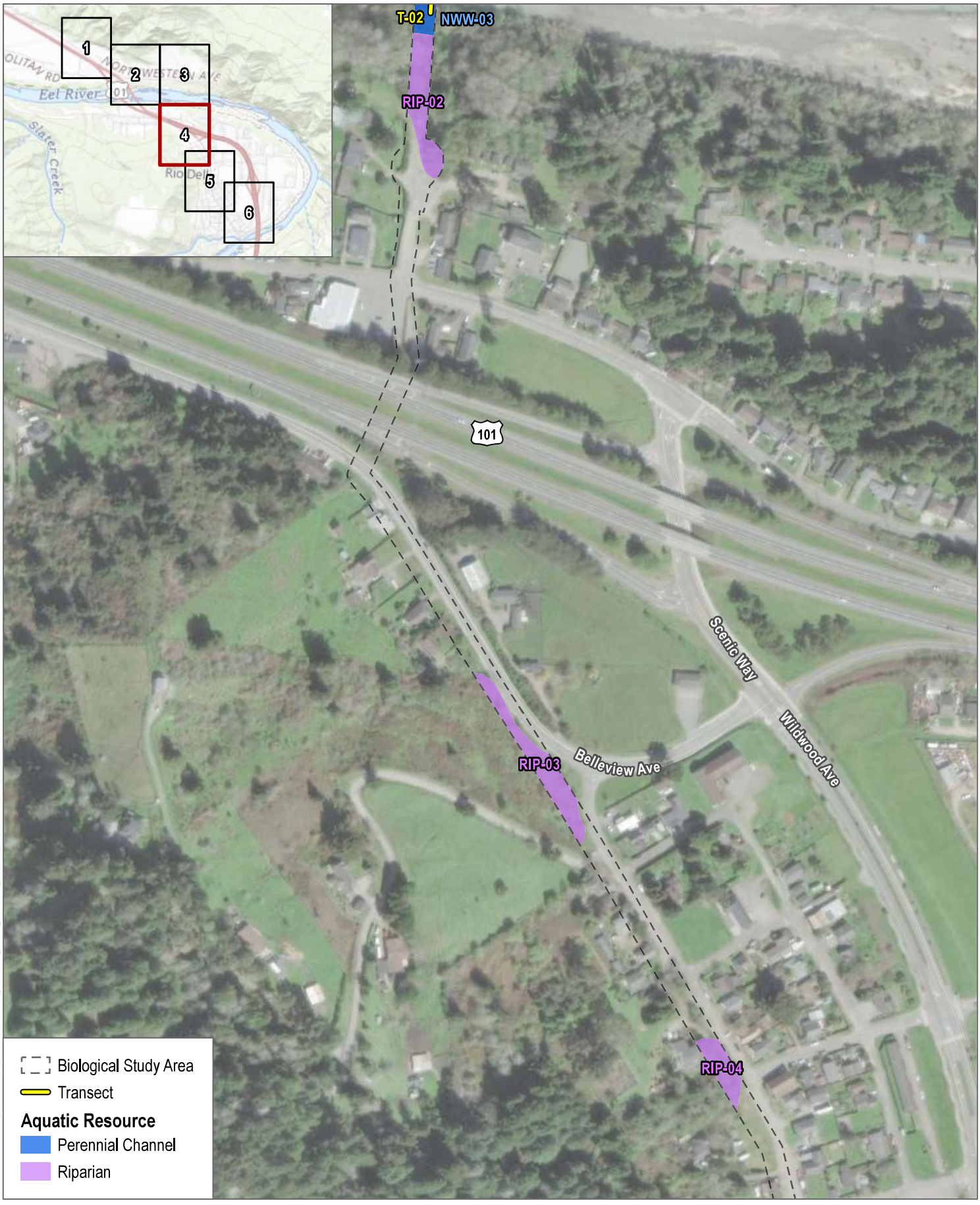

SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 6-4

Aquatic Resources

CSLC Rio Dell Feeder Project

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SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 6-5

Aquatic Resources

CSLC Rio Dell Feeder Project

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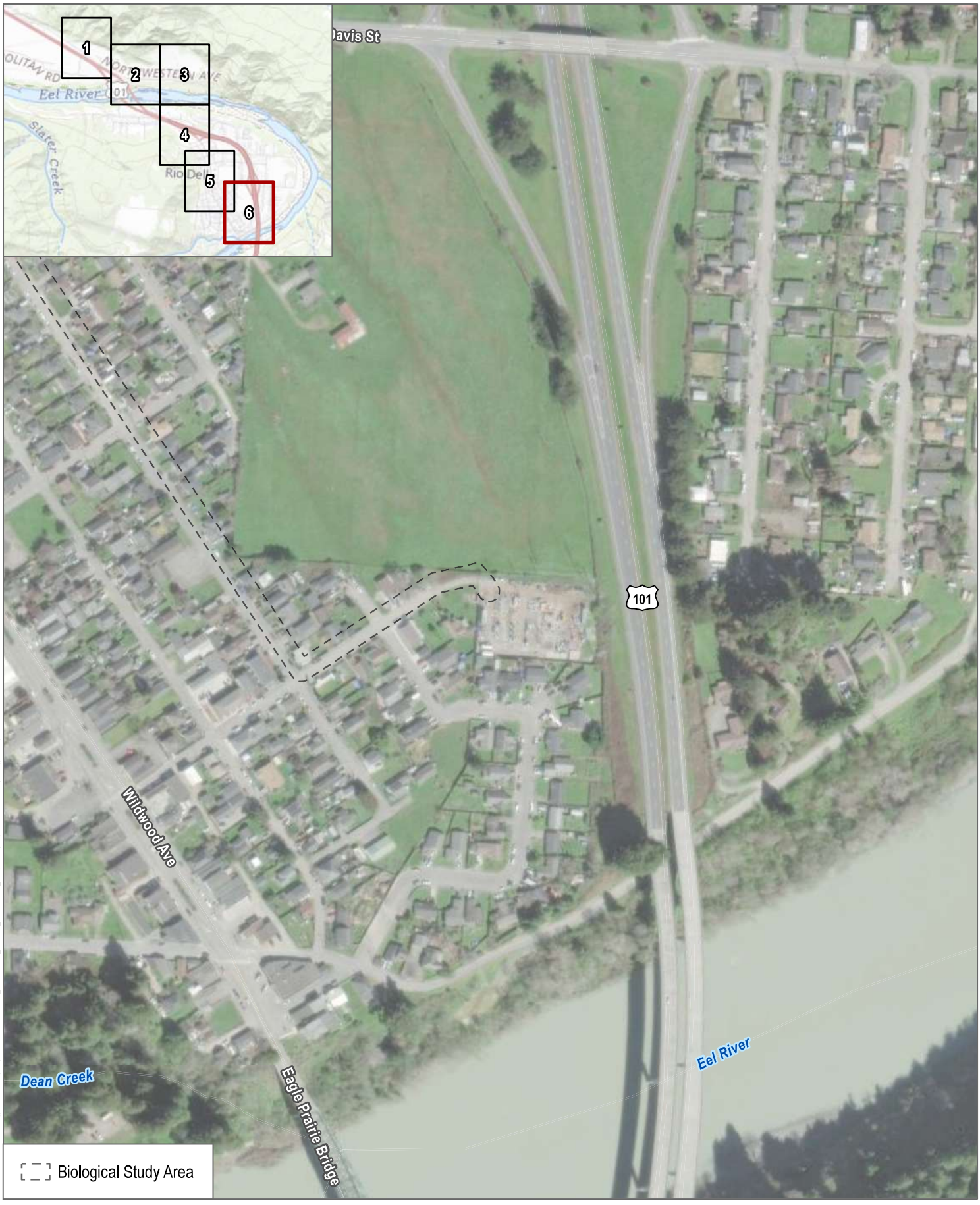

SOURCE: Bing Maps 2024, OpenStreetMap

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FIGURE 6-6

Aquatic Resources

CSLC Rio Dell Feeder Project

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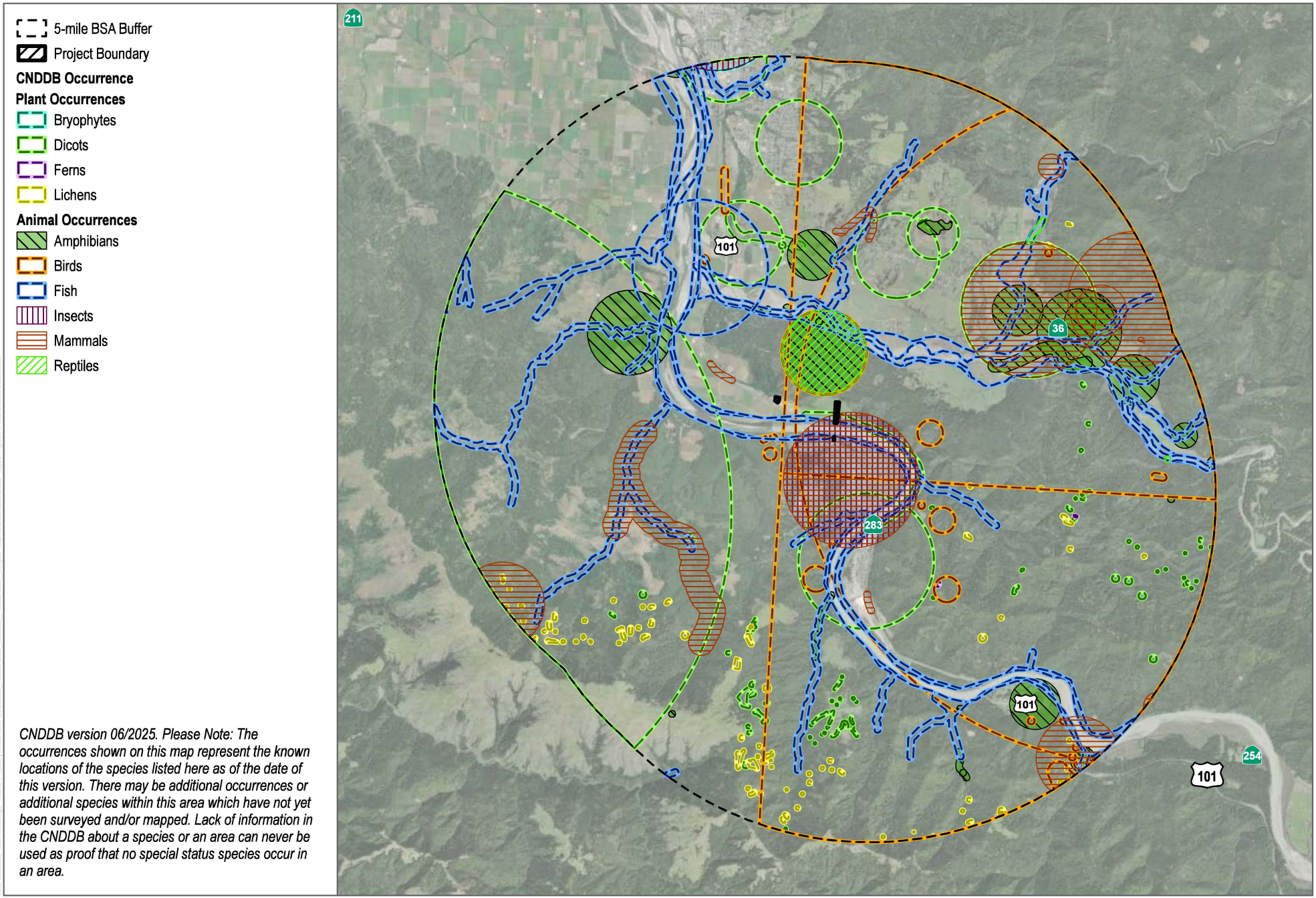

FIGURE 7

CNDDB Occurrences

CSLC Rio Dell Feeder Project

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Appendix A

Aquatic Resources Delineation Report

RIO DELL FEEDER PROJECT

Delineation of Aquatic Resources

February 2025

Prepared for:

Pacific Gas & Electric
6121 Bollinger Canyon Road
San Ramon, California 94583

Prepared by:

Stantec Consulting Services Inc.
376 Hartnell Avenue Suite B
Redding, California 96002
www.stantec.com

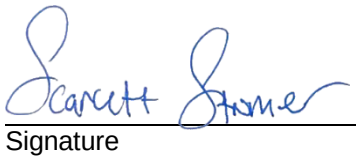
Project Number:

185705586

The conclusions in the Report titled **RIO DELL FEEDER PROJECT** are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from **Pacific Gas & Electric** (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by: 

Signature

Scarlett Stromer

Printed Name

Reviewed by: 

Signature

Chariss Femino

Printed Name

Approved by:

Signature

Printed Name

Table of Contents

List of Figures

Figures are provided at the end of this report.

List of Appendices

Acronyms and Abbreviations

°F	degrees Fahrenheit
GPS	Global Positioning System
NCRWQCB	North Coast Regional Water Quality Control Board
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high-water mark
PG&E	Pacific Gas & Electric
project	Rio Dell Feeder Project
Stantec	Stantec Consulting Services Inc.
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service

Executive Summary

On behalf of Pacific Gas & Electric (PG&E), Stantec Consulting Services Inc. (Stantec) conducted a delineation of aquatic resources occurring in the Rio Dell Feeder Project (project) study area near the community of Rio Dell in Humboldt County, California. The project involves horizontal directional drilling under the Eel River, a perennial stream. Bore pits will be excavated in upland areas on the north and south banks of the stream. These include two exit and two entrance locations for the pipeline route.

The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region* (Version 2.0) (USACE 2010). However, the delineation is incomplete due to high river flows at the time of the field visit. These details are explained in further detail in the methods. The field delineation was conducted on February 3, 2025. A total of 0.049 acre of aquatic resources was mapped within the accessible portion of the study area, including one fresh emergent wetland. A perennial stream (Eel River) is also present; however, accurate boundaries of the Eel River were not mapped due to abnormally high flows at the time of the field visit.

This survey is in support of project permitting for resources that may fall within the following jurisdictions:

- The US Army Corps of Engineers, pursuant to Section 404 of the Clean Water Act
- The North Coast Regional Water Quality Control Board (NCRWQCB), pursuant to the Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, §13050)

This delineation of aquatic resources documents and describes aquatic resources to support a Preliminary Jurisdictional Determination from the US Army Corps of Engineers (USACE). This delineation is subject to verification by USACE, Sacramento District and the NCRWCB. Stantec advises all parties to treat the information contained herein as preliminary until USACE and NCRWQCB provide written verification of the boundaries of its jurisdiction.

If USACE wishes to conduct a field verification, PG&E requests that USACE contact Maxwell Todi by telephone at (916) 201-8547 or by email at maxwell.todi@pge.com to schedule a date and time to access the study area.

1 Project Location

The study area comprises 4.39 acres and includes the proposed horizontal directional drilling route and exit and entrance bore pits associated with the Rio Dell Feeder Project (project) in Humboldt County, California. The project location and vicinity are shown on Figure 1. (All figures are provided at the end of this report.)

The study area is in Rio Dell, California, and is shown on the *Hydesville* 7.5-minute US Geological Survey quadrangle in Township 2N, Range 1EW, Section 31.

To access the study area in Rio Dell from Highway 101 travel south and take exit 681, then turn left onto Wildwood Avenue. Continue for 0.3 miles, then take a left onto Eeloa Avenue. Take the first left onto N. Pacific Avenue where the southern portion of the study area is located. To navigate to the northern portion of the study area, traveling from the town of Rio Dell, take Highway 101 north and turn right onto Northwestern Avenue, Travel for 0.8 mile, then park at the tree farm gate. With PG&E access, pass through the locked gate and continue 0.1 mile.

2 Environmental Setting

2.1 CURRENT AND RECENT LAND USE

The study area occurs mainly on the wide Eel River floodplain and adjacent riparian habitat. A farm that produces hay or grazing cattle is located north of the study area. Residential properties and Highway 101 are located south of the study area.

2.2 SITE TOPOGRAPHY AND ELEVATION

The topography of the study area is relatively flat with minor depressions, except for the wide Eel River channel that slopes downward to the center of the stream. The study area elevation ranges from 39 to 105 feet above mean sea level.

2.3 CLIMATE

Historical data used to describe the climate at the study area is collected in Scotia, California, located approximately 2 miles south of study area (Western Regional Climate Center 2025). The climate data is described below.

- **Type:** The climate of the area is characterized as a temperate Mediterranean with moderate wet winters and warm, dry summers.
- **Precipitation:** Precipitation in the study area primarily occurs as rain, with occasional snowfall. The average annual rainfall is approximately 48 inches, and the average annual snowfall is 0.3 inch.
- **Air Temperature:** Air temperatures in the study area range between an average January high of 55 degrees Fahrenheit (ºF), and an average July high of 66ºF. The annual average high is approximately 63ºF.
- **Growing Season:** The growing season (i.e., 50 percent probability of air temperature 28ºF or higher) in the study area is 365 days year.

2.4 HYDROLOGY AND HYDROLOGIC FEATURES

The main hydrologic feature is the Eel River which occurs in a wide channel through the center of the study area. Hydrology is sourced by precipitation, snow melt, and high ground water table.

2.5 SOIL MAP UNITS

Four soil map units occur in the study area. These are described in the *Soil Survey of Humboldt County Area, California* (Natural Resources Conservation Service [NRCS] 2025). The map unit is shown in Figure 2 and described below.

- **100—Water and Fluvents, 0 to 2 percent slopes:** This hydric soil does somewhat excessively drain, with more than 80 inches deep to a restrictive layer. Its parent material is alluvium.

- **210—Dungan, 0 to 2 percent slopes:** This non-hydric soil is well-drained, with more than 80 inches deep to the restrictive layer. Its parent material is alluvium**.**
- **220—Ferndale, 0 to 2 percent slopes:** This non-hydric soil is well-drained, with more than 80 inches deep to the restrictive layer. Its parent material is alluvium**.**
- **266—Hookton—Urban Land complex, 0 to 2 percent slopes:** This non-hydric soil is somewhat poorly drained, with more than 80 inches deep to the restrictive layer. Its parent material is alluvium**.**

2.6 VEGETATION COMMUNITIES

Vegetation communities are based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

Montane riparian occurs in the southern and northern portion of the study area bordering the Eel River. The community is dominated by dense big leaf maples (*Acer macrophyllum*), pacific willow (*Salix lasiandra)*, black cottonwood (*Populus balsamifera* ssp. *trichocarpa),* and red alder (*Alnus rubra).*

Fresh emergent wetland occurs in the northern portion of the study area. The community has an herbaceous layer dominated by poison hemlock (*Conium maculatum)* and spreading rush (*Juncus patens)*.

Urban habitat occurs within the southern portion of the study. The proposed bore pits on the south side of the river is located within both the road base and an asphalt road leading to a residential home. The surrounding area is a large parking lot with an asphalt substrate.

2.7 METHODS

Stantec Consulting Services Inc. (Stantec) conducted an onsite routine delineation of aquatic resources based on field observations of positive indicators for wetland vegetation, hydrology, and soils, and indicators of an ordinary high-water mark (OHWM). Due to higher-than-normal precipitation, the Eel River flows prevented the delineators from conducting the delineation in the entire study area. Photograph documentation of the conditions onsite is provided in Appendix C. The routine delineation included standard 3-parameter data points to document wetland features and upland conditions in areas that were accessible. In the non-flooded zones, upland soil pits were excavated to document upland conditions, and the current high-water line was mapped. Due to high flows and obscured indicators of normal flows, the OHWM was not mapped. Bore pit site conditions were investigated, and suspect soil pits were excavated to document the upland conditions and lack of wetlands.

In the accessible wetland areas, the delineation method is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region (Version 2.0)* (USACE 2010). Plant taxonomy follows Jepson eflora (Jepson Flora Project 2025). Stantec confirmed wetland indicator status for plant species using *The National Wetland Plant List* (USACE 2020), and the “50/20 Rule” or “Prevalence Index” was applied to determine the presence or absence of hydrophytic vegetation (USACE 2010). The presence of primary and secondary wetland hydrology indicators was documented for each wetland feature.

The 3-parameter approach for USACE is also consistent with the North Coast Regional Water Quality Control Board (NCRWQCB). NCRWQCB defines wetlands as such: “An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.”

Soil pits were dug in representative wetland features and upland conditions to a depth sufficient to document the presence or confirm the absence of hydric soil or wetland hydrology indicators. Stantec examined the soils to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field following the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Vasilas et al. 2024). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring in the study area was reviewed using the *Web Soil Survey* (NRCS 2025). At least one set of sample points was selected to best represent the wetland feature type and the adjacent uplands.

Prior to conducting the onsite routine delineation, the US Fish and Wildlife Service’s (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper (USFWS 2025) was reviewed to determine whether any surface water and wetland features were previously mapped in the study area and general vicinity. Surface water and wetland features within the NWI are described by the Cowardin et al. (1979) system, as amended by subsequent updates (Federal Geographic Data Committee 2013). Non-riparian features delineated during the onsite routine delineation were classified using the Cowardin et al. (1979) system based on existing NWI mapping or assigned a Cowardin type if not previously mapped. The USACE Aquatic Resources Excel spreadsheet, which includes specific information about the wetland and other waters features delineated, including their Cowardin type, was completed and submitted as a separate deliverable with this report.

Field observations were conducted on February 3, 2025. Four 3-parameter data points were used to characterize and document one wetland type, the adjacent upland, and suspect areas.

The boundaries of delineated features and the associated data points were mapped using an Eos Positioning Systems®, Inc., Arrow 100 submeter Global Positioning System (GPS) receiver, paired to an Apple® iPhone® using Esri® Field Maps app. The GPS data were overlaid onto an aerial photograph of the study area to develop the delineation map.

3 Results and Discussion

Aquatic resources occur in the study area as a palustrine emergent wetland, shown in Figure 3. The feature is 0.049 acre in size and is located north of the Eel River adjacent to the proposed western horizonal directional drilling exit bore pit. The inaccessible portions of the study area and the high-water mark at the time of the field visit are also provided in Figure 3. The areas occupied by the proposed horizontal direction drilling exit and entry bore pits were accessible, and despite the high amount of rainfall, the wetland boundaries mapped within those areas are accurate to the presence of all three wetland indicators.

Routine wetland determination data forms are presented in Appendix A and a list of plants observed is provided in Appendix B. Representative photographs of the delineated features, flooded areas and sample point locations are presented in Appendix C.

3.1 CHARACTERIZATION OF DELINEATED FEATURES

3.1.1 Palustrine Emergent Wetland

One palustrine emergent wetland (W1) occurs in northern portion of the study area. The wetland is in a disturbed vegetated pullout of a main road within a tree farm on the north side of the Eel River. The wetland is dominated by hydrophytic vegetation, including spreading rush and poison hemlock. The sole indicator of hydric soils observed was a redox dark surface (F6). Wetland hydrology indicators observed include the primary indicator saturation (A3). Hydrology indicators are likely to still be present during normal weather conditions due to the concave surface of the wetland, the presence of hydrophytic vegetation, and the presence of hydric soils.

4 Conclusion

Aquatic resources delineated within the study area occupy a total of 0.049 acre and include palustrine emergent wetland. Additional perennial stream (Eel River) and riparian wetland features are also present in the study area; however, this area was inaccessible, or regular conditions were obscured due to the high level of river flows. All aquatic resources may be under the jurisdiction of USACE and NCRWQCB

Determinations of aquatic resources are based on current conditions and are made in accordance with relevant US Environmental Protection Agency, USACE and NCRWQCB guidance. This delineation is subject to verification by USACE and NCRWQCB. Stantec advises all parties to treat the information contained herein as preliminary until USACE and NCRWQCB provides written verification of the boundaries of their jurisdiction.

5 References

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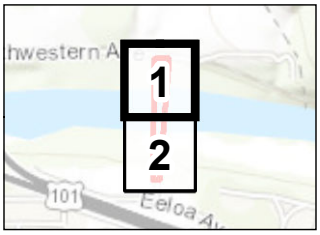
FIGURES



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: Esri World Imagery, 03/17/2024
3. Delineators: Scarlett Stromer and Brynn Etherton
4. Delineation Date: February 3, 2025
5. Disclaimer: This delineation of aquatic resources is subject to verification by the U.S. Army Corps of Engineers (USACE) and the North Coast Regional Water Quality Control Board (NCRWQCB). Stantec advises all parties that the delineation is preliminary until the USACE provides a written verification.

- Map Reference Point
- Study Area (4.39 acres)
- Horizontal Directional Drilling Exit/Entrance
- Photo Point
- Upland Sample Point
- Wetland Sample Point
- High Water During the Field Visit
- Study Area Not Accessed

Aquatic Resources

- Palustrine Emergent Wetland (PEM) (0.049 acre)

0 125 Feet
1 inch = 125 feet (At page size of 8.5"x11")

N

Stantec

Project Location
Humboldt County, California
USGS Quad: Hydesville
PLSS: T 2N, R 01E, Sec. 31

185706839
Prepared by TM on 2025-02-18
Reviewed by SS on 2025-02-18

Client/Project
PG&E Rio Dell Feeder Project

Figure No.
3

Title
Aquatic Resources

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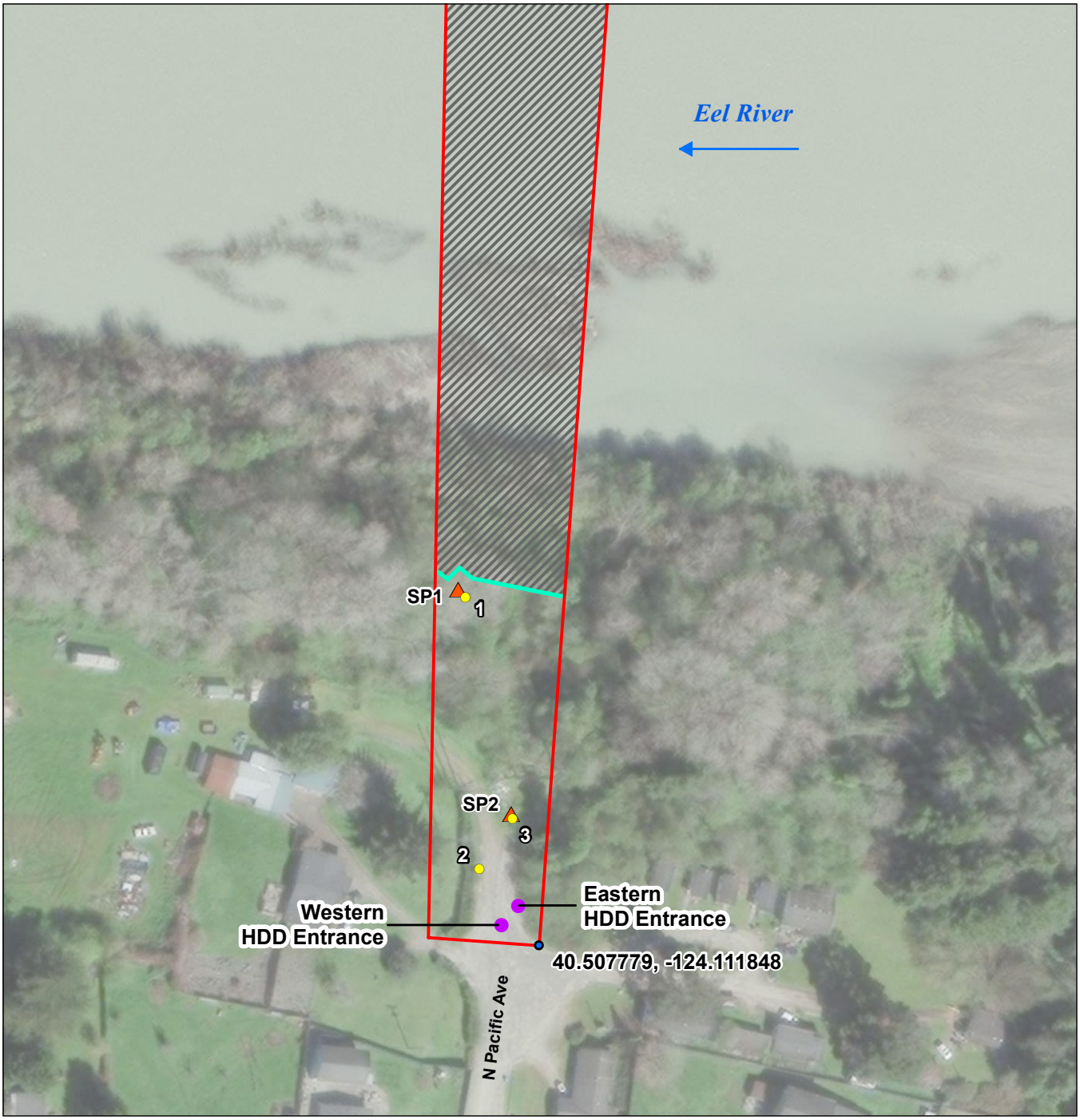

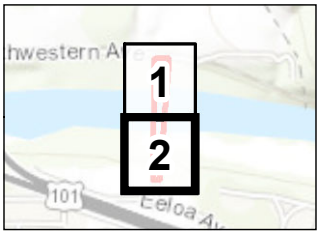

Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: Esri World Imagery, 03/17/2024
3. Delineators: Scarlett Stromer and Brynn Etherton
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- Map Reference Point
- Study Area (4.39 acres)
- Horizontal Directional Drilling Exit/Entrance
- Photo Point
- Upland Sample Point
- High Water During the Field Visit
- Study Area Not Accessed

0 125 Feet
1 inch = 125 feet (At page size of 8.5"x11")
N

Stantec

Project Location
Humboldt County, California
USGS Quad: Hydesville
PLSS: T 2N, R 01E, Sec. 31

185706839
Prepared by TM on 2025-02-18
Reviewed by SS on 2025-02-18

Client/Project
PG&E Rio Dell Feeder Project

Figure No.
3

Title
Aquatic Resources

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APPENDIX A

Routine Wetland Determination Data Forms

APPENDIX B

Plants Observed

Table B-1. Plant Species Observed on February 3, 2025

Scientific Name	Common Name	Origin	Family	Wetland Indicator Status[1]
Alnus rubra	red alder	native	Betulaceae	FAC
Allium sp.	onion	N/A	Amaryllidaceae	NI
Baccharis pilularis ssp. *consanguinea*	coyote brush	native	Asteraceae	UPL
Conium maculatum	poison hemlock	non-native	Apiaceae	FAC
Equisetum sp.	horsetail	N/A	Horsetail	NI
Geranium molle	crane's bill geranium	non-native	Geraniaceae	UPL
Hesperocnide tenella	western stinging nettle	native	Urticaceae	UPL
Holcus lanatus	common velvet grass	non-native	Poaceae	FAC
Juncus patens	spreading rush	native	Juncaceae	FACW
Poa sp.	bluegrass	N/A	Poaceae	NI
Populus balsamifera ssp. *trichocarpa*	black cottonwood	native	Salicaceae	FAC
Rubus ursinus	California blackberry	native	Rosaceae	FACU
Rubus spectabilis	salmonberry	native	Rosaceae	FAC
Salix lasiandra	pacific willow	native	Salicaceae	FACW
Scrophularia californica	California bee plant	native	Scrophulariaceae	FAC
Silybum marianum	milk thistle	non-native	Asteraceae	UPL
Sonchus oleraceus	sow thistle	non-native	Asteraceae	UPL
Trifolium hirtum	rose clover	non-native	Fabaceae	UPL

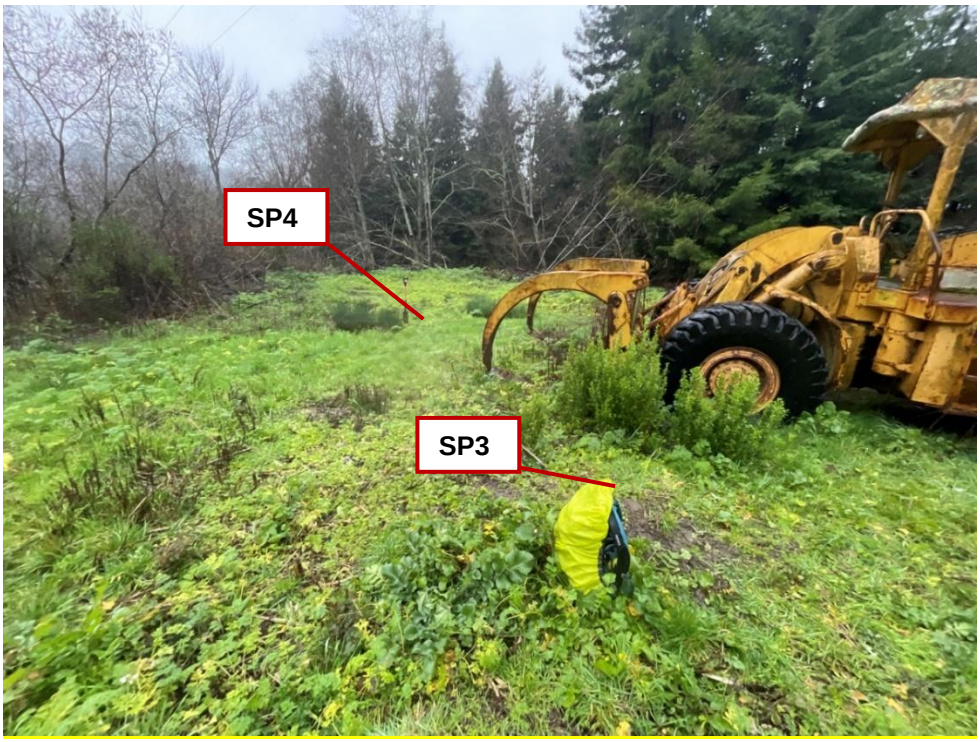
Notes:
1. Wetland Indicator Status:
Obligate (OBL). Occur almost always under natural conditions in wetlands.
Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands. Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.
Facultative Upland (FACU). Usually occur in non-wetlands but occasionally found in wetlands.
Upland (UPL). Almost always under natural conditions in non-wetlands in the region specified. may occur in wetlands in another region.
No Indicator (NI). No indicator provided and considered UPL. Source:
United States Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5. Available at: https://cwbi-app.sec.usace.army.mil/nwpl_static/v34/home/home.html. Accessed February 2025.
N/A = not applicable

APPENDIX C

Representative Photographs

Client	Pacific Gas & Electric	**Project**	Rio Dell Feeder Project
Site Location	Rio Dell, Humboldt County, California		

Photograph #: 1 **Photo Location:** Sample point (SP)1. Suspect upland point. **Survey Date:** 2/3/2025 **Comments:** SP 1 (shovel) documents upland conditions adjacent to the Eel River high-water mark. Eel River was too high to access the riparian wetland. Orientation: northeast.	
Photograph #: 2 **Photo Location:** Bore pit **Survey Date:** 2/3/2025 **Comments:** Estimated location of the western and eastern HDD entrance bore pit. Orientation: northeast	

Photograph #: 3 **Photo Location:** SP2. Upland pit **Survey Date:** 2/3/2025 **Comments:** Soil pit to document upland conditions near the eastern entrance bore pits. Orientation: northeast	
Photograph #: 4 **Photo Location:** Wetland (W)1-SP3 and SP4 **Survey Date:** 2/3/2025 **Comments:** Palustrine emergent (PEM) wetland documented by SP4, and the paired upland point documented by SP3. Orientation: west	

Photograph #: 5 **Photo Location:** Eel River flooding into wetland **Survey Date:** 2/3/2025 **Comments:** Documentation of the Eel River flooding. Orientation: southwest.	
Photograph #: 6 **Photo Location:** Eel River flooding past the regular ordinary high-water mark. **Survey Date:** 2/3/2025 **Comments:** Documentation of the Eel River flooding. Orientation: southwest.	

Photograph #: 7 **Photo Location:** Eel River flooding past the regular ordinary high-water mark. **Survey Date:** 2/3/2025 **Comments:** Documentation of the Eel River flooding. Orientation: southwest.	
Photograph #: 8 **Photo Location:** Proposed northern bore pit location. **Survey Date:** 2/3/2025 **Comments:** Documentation of proposed eastern HDD exit bore pits that is outside the boundary of the wetland. Orientation: south.	

Appendix B
Representative Site Photos

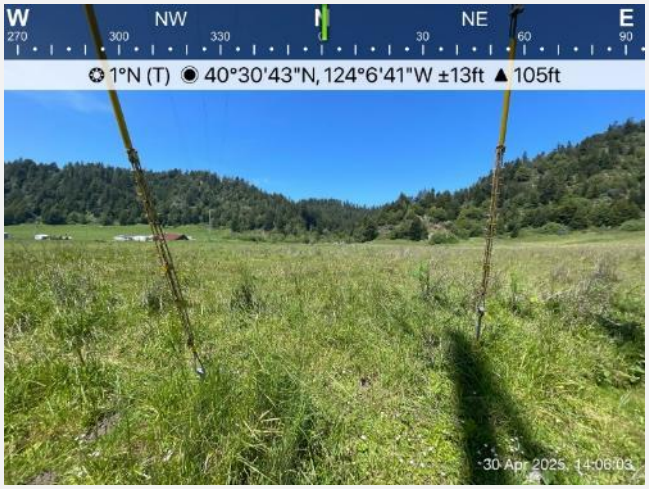


Photo 1. Cattle pasture/non-native grassland habitat at northern extent of BSA, on north side of the Eel River, facing north.

Photo 2. Ephemeral wash in northern portion of BSA, on north side of the Eel River, facing south.

Photo 3. Pullout on north side of the Eel River, facing north.

Photo 4. Pullout on north side of the Eel River, facing south.

Photo 5. Pullout on north side of the Eel River, facing west.

Photo 6. Pullout on north side of the Eel River, facing east.

Photo 7. Forest opening on north side of the Eel River, facing north.

Photo 8. Forest opening on north side of the Eel River, facing south.

Photo 9. Forest opening on north side of the Eel River, facing west.

Photo 10. Forest opening on north side of the Eel River, facing east.

Photo 11. Stream where northern red-legged frog and unknown juvenile salmonid were observed, on north side of the Eel River, facing north.

Photo 12. Stream where northern red-legged frog and unknown juvenile salmonid were observed, on north side of the Eel River, facing south.

Photo 13. Stream where northern red-legged frog and unknown juvenile salmonid were observed, on north side of the Eel River, facing west.

Photo 14. Stream where northern red-legged frog and unknown juvenile salmonid were observed, on north side of the Eel River, facing east.

Photo 15. Riparian forest along the Eel River, on north side of the Eel River, facing north.

Photo 16. Riparian forest along the Eel River, on north side of the Eel River, facing south.

Photo 17. Riparian forest along the Eel River, on north side of the Eel River, facing west.

Photo 18. Riparian forest along the Eel River, on north side of the Eel River, facing east.

Photo 19. River access and riparian forest on the north side of the Eel River, facing west.

Photo 20. River access and riparian forest on the north side of the Eel River, facing west.

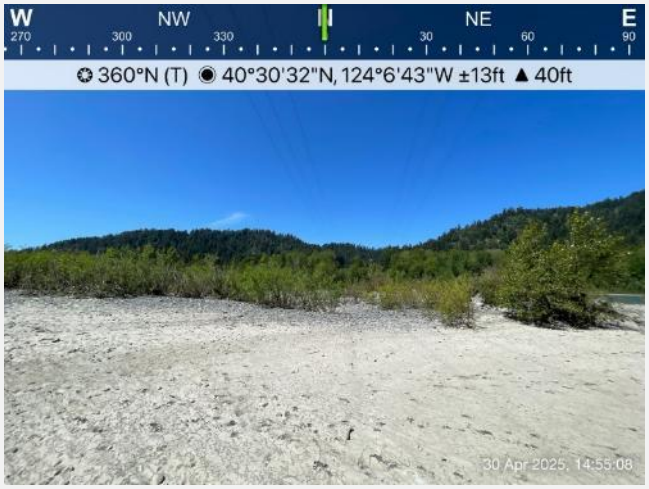


Photo 21. Gravel bar on the south side of the Eel River, facing north.

Photo 22. Riparian forest viewed from gravel bar on the south side of the Eel River, facing south.

Photo 23. Gravel bar on the south side of the Eel River, facing west.

Photo 24. Gravel bar on the south side of the Eel River, facing east.

Photo 25. Riparian forest under lines on the south side of Eel River, facing north.

Photo 26. Riparian forest under lines on the south side of Eel River, facing southwest.

Photo 27. Riparian forest under lines on the south side of Eel River, facing west.

Photo 28. Riparian forest under lines on the south side of Eel River, facing southeast.

Photo 29. Urban/residential area on the south side of Highway 101, facing north.

Photo 30. Urban/residential area on the south side of Highway 101, facing south.

Photo 31. Urban/residential area on the south side of Highway 101, facing west.

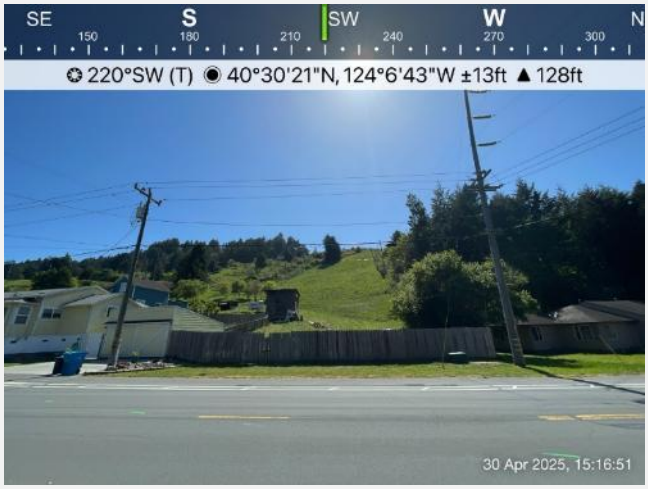


Photo 32. Urban/residential area on the south side of Highway 101, facing southwest.

Photo 33. Vacant lot from substation at southern end of BSA, facing north.

Photo 34. Entrance to substation at southern end of BSA, facing southwest.

Photo 35. Vacant lot from substation at southern end of project, facing east.

Appendix C
List of Observed Plant Species

Plant Species

Eudicots

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Toxicodendron diversilobum—poison oak—FACU

APIACEAE—CARROT FAMILY

* *Conium maculatum*—poison hemlock—FACW
* *Daucus carota*—Queen Anne's lace—UPL
* *Foeniculum vulgare*—fennel—Not Listed

ASTERACEAE—SUNFLOWER FAMILY

Artemisia douglasiana—Douglas' sagewort—FAC

Baccharis pilularis—coyote brush—Not Listed

* *Bellis perennis*—lawndaisy—Not Listed
* *Carduus pycnocephalus ssp. pycnocephalus*—Italian plumeless thistle—Not Listed
* *Delairea odorata*—Cape-ivy—FAC
* *Helminthotheca echioides*—bristly oxtongue—FAC
* *Hypochaeris glabra*—smooth cat's ear—Not Listed
* *Leucanthemum vulgare*—oxeye daisy—UPL

Petasites frigidus var. *palmatus*—arctic sweet coltsfoot—FACW

* *Silybum marianum*—blessed milkthistle—Not Listed

BETULACEAE—BIRCH FAMILY

Alnus rubra—red alder—FACW

BRASSICACEAE—MUSTARD FAMILY

* *Raphanus sativus*—cultivated radish—Not Listed

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY

Lonicera involucrata—twinberry honeysuckle—FAC

Symphoricarpos mollis—creeping snowberry—FACU

CORNACEAE—DOGWOOD FAMILY

Cornus sericea—red osier—FACW

CUCURBITACEAE—GOURD FAMILY

Marah oregana—coastal manroot—Not Listed

FABACEAE—LEGUME FAMILY

* *Lathyrus latifolius*—perennial pea—Not Listed

* *Medicago polymorpha*—burclover—FACU
* *Trifolium hirtum*—rose clover—Not Listed
* *Geranium molle—dovefoot geranium*—Not Listed

GERANIACEAE—GERANIUM FAMILY

* *Geranium molle*—dovefoot geranium—Not Listed

LAMIACEAE—MINT FAMILY

* *Mentha pulegium*—pennyroyal—OBL

LYTHRACEAE—LOOSESTRIFE FAMILY

* *Lythrum hyssopifolia*—hyssop loosestrife—OBL

MALVACEAE—MALLOW FAMILY

Malacothamnus parishii—Parish's bushmallow—Not Listed

PLANTAGINACEAE—PLANTAIN FAMILY

* *Plantago lanceolata*—narrowleaf plantain—FAC

Veronica americana—American speedwell—OBL

POLYGONACEAE—BUCKWHEAT FAMILY

* *Rumex crispus*—curly dock—FAC

RANUNCULACEAE—BUTTERCUP FAMILY

Ranunculus californicus—California buttercup—FACU

ROSACEAE—ROSE FAMILY

* *Cotoneaster lacteus*—milkflower cotoneaster—Not Listed
* *Rubus armeniacus*—Himalayan blackberry—FAC

Rubus spectabilis—salmonberry—FAC

RUBIACEAE—MADDER FAMILY

Galium aparine—stickywilly—FACU

SALICACEAE—WILLOW FAMILY

Populus trichocarpa—black cottonwood—FAC

Salix exigua var. *hindsiana*—narrowleaf willow—FACW

Salix lasiolepis—arroyo willow—FACW

SAPINDACEAE—SOAPBERRY FAMILY

Acer macrophyllum—bigleaf maple—FAC

SCROPHULARIACEAE—FIGWORT FAMILY

* *Buddleja davidii*—orange eye butterflybush—FACU

Scrophularia californica—California figwort—FAC

SOLANACEAE—NIGHTSHADE FAMILY

* *Solanum nigrum*—black nightshade—FACU

URTICACEAE—NETTLE FAMILY

Urtica dioica—stinging nettle—FAC

Ferns and Fern Allies

BLECHNACEAE—DEER FERN FAMILY

Woodwardia fimbriata—giant chainfern—FACUW

EQUISETACEAE—HORSETAIL FAMILY

Equisetum arvense—field horsetail—FAC

Equisetum telmateia ssp. *braunii*—giant horsetail—FACW

Gymnosperms and Gnetophytes

CUPRESSACEAE—CYPRESS FAMILY

Sequoia sempervirens—redwood—Not Listed

Monocots

ALLIACEAE—ONION FAMILY

Allium tribracteatum—three-bracted onion—Not Listed

CYPERACEAE—SEDGE FAMILY

Carex leporina—eggbract sedge—FACW

Cyperus eragrostis—tall flatsedge—FACW

JUNCACEAE—RUSH FAMILY

Juncus balticus—FACW

Juncus bufonius—toad rush—FACW

* *Juncus cyperoides*—Forbestown rush—Not Listed

POACEAE—GRASS FAMILY

Agrostis hallii—Hall's bentgrass—Not Listed

* *Anthoxanthum odoratum*—sweet vernal grass—FAC

* *Avena barbata*—slender oat—Not Listed

* *Briza maxima*—big quakinggrass—Not Listed
* *Briza minor*—little quakinggrass—FAC
* *Bromus diandrus*—ripgut brome—Not Listed
* *Bromus hordeaceus*—soft brome—FACU
  Bromus vulgaris—Columbia brome—FACU
* *Cortaderia selloana*—Uruguayan pampas grass—FACU
  Deschampsia danthonioides—annual hairgrass—FACW
* *Holcus lanatus*—common velvet grass—FAC

* Signifies introduced (non-native) species.
  FAC = facultative
  FACU = facultative upland
  FACW = facultative wetland
  OBL = obligate

Appendix D
List of Observed Wildlife Species

Wildlife Species

Invertebrates

APIDAE—BEES

Bombus sp.—bumble bee

Apis mellifera—European honey bee

ARIOLIMACIDAE—BANANA SLUGS AND ALLIES

Ariolimax columbianus—Pacific banana slug

NYMPHALIDAE—BRUSHFOOTS

Speyeria sp.—unknown greater fritillary

PIERIDAE—WHITES, YELLOWS, AND SULPHURS

Pieris marginalis sequoia—redwood white

AESHNIDAE—AESHNIDS, HAWKERS, AND DARNERS

Anax sp. or *Rhionaeschna* sp.—unknown darner

Fish

SALMONIDAE—SALMON, TROUT

Oncorhynchus sp.—unknown salmonid species

Amphibians

RANIDAE—TRUE FROGS

Rana aurora—northern red-legged frog

Reptiles

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

Birds

ICTERIDAE—BLACKBIRDS

Euphagus cyanocephalus—Brewer's blackbird

* *Molothrus ater*—brown-headed cowbird

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

Spinus tristis—American goldfinch

TYRANNIDAE—TYRANT FLYCATCHERS

Empidonax difficilis—Pacific-slope flycatcher

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis—red-tailed hawk

Buteo lineatus—red-shouldered hawk

TROCHILIDAE—HUMMINGBIRDS

Selasphorus sp.—Allen's/rufous hummingbird

CORVIDAE—CROWS AND JAYS

Corvus brachyrhynchos—American crow

Corvus corax—common raven

ODONTOPHORIDAE—NEW WORLD QUAIL

Callipepla californica—California quail

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

COLUMBIDAE—PIGEONS AND DOVES

Patagioenas fasciata—band-tailed pigeon

PHASIANIDAE—PARTRIDGES, GROUSE, TURKEYS, AND OLD WORLD QUAIL

Meleagris gallopavo—wild turkey

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

HIRUNDINIDAE—SWALLOWS

Tachycineta bicolor—tree swallow

Tachycineta thalassina—violet-green swallow

TURDIDAE—THRUSHES

Catharus ustulatus—Swainson's thrush

Turdus migratorius—American robin

PARIDAE—CHICKADEES AND TITMICE

Poecile rufescens—chestnut-backed chickadee

VIREONIDAE—VIREOS

Vireo huttoni—Hutton's vireo

ANATIDAE—DUCKS, GEESE, AND SWANS

Branta canadensis—Canada goose

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler

Leiothlypis celata—orange-crowned warbler

Setophaga townsendi—Townsend's warbler

PICIDAE—WOODPECKERS AND ALLIES

Dryobates villosus—hairy woodpecker

TROGLODYTIDAE—WRENS

Troglodytes pacificus—Pacific wren

PASSERELLIDAE—NEW WORLD SPARROWS

Melospiza melodia—song sparrow

Zonotrichia leucophrys—white-crowned sparrow

SYLVIIDAE—SYLVIID WARBLERS

Chamaea fasciata—wrentit

Mammals

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

CERVIDAE—DEERS

Odocoileus hemionus columbianus—black-tailed deer

PROCYONIDAE—RACCOONS AND RELATIVES

Procyon lotor—northern raccoon

* signifies introduced (non-native) species

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Appendix E

Special-Status Plant Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (feet amsl)	Potential to Occur
Abronia umbellata var. *breviflora*	pink sand-verbena	None/None/1B.1	Coastal dunes/annual herb/Jun–Oct/0–35	**Not expected to occur.** The BSA lacks suitable sandy habitat.
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	None/None/1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides)/perennial herb/(Apr–May) June–Oct/0–180	**Not expected to occur.** The BSA lacks suitable dune, scrub, and salt marsh habitats.
Cardamine angulata	seaside bittercress	None/None/2B.2	Lower montane coniferous forest, north coast coniferous forest; streambanks/ perennial herb/(Jan)Mar–July/50–3,000	**Potential to occur.** The BSA contains coniferous forest that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Carex arcta	northern clustered sedge	None/None/2B.2	Bogs and fens, north coast coniferous forest (mesic)/perennial herb/June–Sep/195–4,595	**Potential to occur.** The BSA contains coniferous forest that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Carex leptalea	bristle-stalked sedge	None/None/2B.2	Bogs and fens, marshes and swamps, meadows and seeps (mesic)/perennial rhizomatous herb/Mar–July/0–2,295	**Potential to occur.** The BSA contains meadow habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Carex lyngbyei	Lyngbye's sedge	None/None/2B.2	Marshes and swamps (brackish, freshwater)/perennial rhizomatous herb/Apr–Aug/0–35	**Potential to occur.** The BSA contains marsh habitat (within the cattle pasture) that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	None/None/1B.2	Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/Apr–Aug/0–10	**Not expected to occur.** The BSA lacks suitable salt marsh habitat.
Castilleja littoralis	Oregon coast paintbrush	None/None/2B.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (hemiparasitic)/Jun/50–330	**Not expected to occur.** The BSA lacks suitable coastal scrub and dune habitats.
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	None/None/1B.2	Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/Jun–Oct/0–35	**Not expected to occur.** The BSA lacks suitable salt marsh habitat.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (feet amsl)	Potential to Occur
Clarkia amoena ssp. *whitneyi*	Whitney's farewell-to-spring	None/None/1B.1	Coastal bluff scrub, coastal scrub/annual herb/Jun–Aug/35–330	**Not expected to occur.** The BSA lacks suitable coastal scrub habitat.
Downingia willamettensis	Cascade downingia	None/None/2B.2	Cismontane woodland (lake margins), valley and foothill grassland (lake margins), vernal pools/annual herb/Jun–Jul(Sep)/50–3,640	**Not expected to occur.** The BSA lacks suitable lake margin or vernal pool habitat.
Erysimum concinnum	bluff wallflower	None/None/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie/annual/perennial herb/Feb–Jul/0–605	**Not expected to occur.** The BSA lacks suitable coastal scrub or dune habitats.
Erysimum menziesii	Menzies' wallflower	FE/SE/1B.1	Coastal dunes/perennial herb/Mar–Sep/0–115	**Not expected to occur.** The BSA lacks suitable coastal dune habitats.
Erythronium oregonum	giant fawn lily	None/None/2B.2	Cismontane woodland, meadows and seeps; openings, rocky, serpentine (sometimes)/ perennial herb/Mar–Jun(Jul)/330–3,775	**Not expected to occur.** The BSA is outside of the species' known elevation range. Limited suitable cismontane woodland is present in BSA, and there is no meadow or seep habitat.
Erythronium revolutum	coast fawn lily	None/None/2B.2	Bogs and fens, broadleafed upland forest, north coast coniferous forest; mesic, streambanks/perennial bulbiferous herb/ Mar–Jul(Aug)/0–5,250	**Potential to occur.** The BSA contains coniferous forest and meadow habitats that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Fissidens pauperculus	minute pocket moss	None/None/1B.2	North coast coniferous forest (damp coastal soil)/moss/NA/35–3,360	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Gilia capitata ssp. *pacifica*	Pacific gilia	None/None/1B.2	Chaparral (openings), coastal bluff scrub, coastal prairie, valley and foothill grassland/annual herb/Apr–Aug/15–5,465	**Potential to occur.** The BSA contains grassland habitat (cattle pasture) that may provide suitable habitat. There are three CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Gilia millefoliata	dark-eyed gilia	None/None/1B.2	Coastal dunes/annual herb/Apr–Jul/5–100	**Not expected to occur.** The BSA lacks suitable coastal dune habitats.

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (feet amsl)	Potential to Occur
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	None/None/1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie/annual herb/Mar–Jun/0–705	**Not expected to occur.** The BSA lacks suitable coastal scrub, dune, or prairie habitats.
Layia carnosa	beach layia	FT/SE/1B.1	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–Jul/0–195	**Not expected to occur.** The BSA lacks suitable coastal scrub or dune habitats.
Lilium occidentale	western lily	FE/SE/1B.1	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps (freshwater), north coast coniferous forest (openings)/perennial bulbiferous herb/Jun–Jul/5–605	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Montia howellii	Howell's montia	None/None/2B.2	Meadows and seeps, north coast coniferous forest, vernal pools; roadsides (sometimes), vernally mesic/annual herb/(Feb)Mar–May/0–2,740	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are 27 CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	None/None/1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; mesic/annual herb/Apr–Jul/15–5,710	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Noccaea fendleri ssp. *californica*	Kneeland Prairie pennycress	FE/None/1B.1	Coastal prairie (serpentinite)/perennial herb/May–Jun/2,495–2,675	**Not expected to occur.** The BSA is outside of the species' known elevation range and lacks coastal prairie.
Packera bolanderi var. *bolanderi*	seacoast ragwort	None/None/2B.2	Coastal scrub, north coast coniferous forest; roadsides (sometimes)/perennial rhizomatous herb/(Jan–Apr)May–Jul(Aug)/100–2,135	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are 24 CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Piperia candida	white-flowered rein orchid	None/None/1B.2	Broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest; serpentine (sometimes)/perennial herb/(Mar–Apr)May–Sep/100–4,300	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/Life Form/ Blooming Period/Elevation Range (feet amsl)	Potential to Occur
				records of this species within 5 miles (CDFW 2025).
Platismatia lacunosa	crinkled rag lichen	None/None/2B.3	North coast coniferous forest, riparian woodland/foliose lichen (epiphytic)/NA/65–6,560	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Polemonium carneum	Oregon polemonium	None/None/2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest/perennial herb/Apr–Sep/0–6,005	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025).
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	None/None/1B.2	Coastal bluff scrub, coastal prairie, north coast coniferous forest; roadsides (often)/ perennial rhizomatous herb/(Mar–Apr)May–Aug/50–4,035	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are four CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Sidalcea oregana ssp. *eximia*	coast checkerbloom	None/None/1B.2	Lower montane coniferous forest, meadows and seeps, north coast coniferous forest/ perennial herb/Jun–Aug/15–4,395	**Potential to occur.** The BSA contains coniferous forest habitat that may provide suitable habitat. There are no CNDDB records of this species within 5 miles (CDFW 2025).
Spergularia canadensis var. *occidentalis*	western sand-spurrey	None/None/2B.1	Marshes and swamps (coastal salt)/annual herb/Jun–Aug/0–10	**Not expected to occur.** The BSA lacks suitable salt marsh habitat.

Notes: CRPR = California Rare Plant Rank; amsl = above mean sea level; BSA = biological study area; CNDDB = California Natural Diversity Database; NA = not applicable.
Status Legend
Federal
FE: Federally listed as endangered
FT: Federally listed as threatened
State
SE: State listed as endangered
CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere

Threat Rank

0.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

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Appendix F

Special-Status Wildlife Species Potential to Occur

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Invertebrates				
Bombus occidentalis	western bumble bee	None/SCE	Once common and widespread, species has declined precipitously from central California to southern British Columbia, perhaps from disease	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are four CNDDB records of this species within 5 miles of the BSA (CDFW 2025).There are no recent Bumble Bee Watch records of this species within 5 miles of the BSA (Bumble Bee Watch 2025).
Danaus plexippus plexippus pop. 1	monarch – California overwintering population	FPT/None	Wind-protected tree groves with nectar sources and nearby water sources	**Not expected to occur.** The BSA is located outside the known overwintering range of monarchs – there are no known overwintering sites in Humboldt County (Western Monarch Count 2025). There are no CNDDB or iNaturalist records of this species within 5 miles of the BSA (CDFW 2025, iNaturalist 2025).
Fishes				
Acipenser medirostris pop. 1	green sturgeon – southern DPS	FT/SSC	Spawns in deep pools in large, turbulent, freshwater rivers; adults live in oceanic waters, bays, and estuaries	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Green sturgeon are known to occur in the Eel River.

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Entosphenus tridentatus	Pacific lamprey	None/SSC	Freshwater habitat includes lakes, rivers, and creeks; soft substrates in shallow areas along banks; in Goose Lake, Klamath and Shasta Rivers, and Copco Lake	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Pacific lamprey are known to occur in the Eel River.
Eucyclogobius newberryi	tidewater goby	FE/SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	**Not expected to occur.** The BSA lacks suitable brackish habitat.
Lampetra richardsoni	western brook lamprey	None/SSC	Gravel riffles and clear, cool streams	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Western brook lamprey are known to occur in the Eel River.
Oncorhynchus clarkii clarkii	coast cutthroat trout	None/SSC	Small streams, with gravel bottoms and gentle gradients	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025). Coast cutthroat trout are known to occur in the Eel River.

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	FT/SE	Naturally spawning population of the stream-maturing summer-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution within range more limited.	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are two CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Steelhead are known to occur in the Eel River.
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	FT/SSC	Naturally spawning population of the ocean-maturing winter-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution throughout range.	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are four CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Steelhead are known to occur in the Eel River.
Oncorhynchustschawytscha pop. 17	chinook salmon – California coastal ESU	FT/None	Federal listing refers to wild spawned, coastal, spring and fall runs between Redwood Cr, Humboldt Co and Russian River, Sonoma Co.	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Chinook salmon are known to occur in the Eel River.
Spirinchus thaleichthys	longfin smelt	None/ST	Aquatic, estuary	**Not expected to occur.** The BSA is located within the species' geographic range, but estuarine habitat is not present. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025). Longfin smelt are known to occur in estuaries of the Eel River.

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Amphibians				
Ascaphus truei	Pacific tailed frog	None/SSC	Low-temperature permanent streams in conifer forests	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025). There are no iNaturalist records of this species within 5 miles of the BSA (iNaturalist 2025).
Rana aurora	northern red-legged frog	None/SSC	Quiet pools in streams, marshes, and ponds	**Observed within BSA.** The BSA is located within the species' geographic range and habitat is present. There are nine CNDDB records of this species within 5 miles of the BSA (CDFW 2025). Several individuals observed in small stream within BSA during April 2025 field survey.
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	None/SSC	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are 18 CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Rhyacotriton variegatus	southern torrent salamander	None/SSC	Clear, shallow, well-shaded streams, waterfalls, and seepages in mature to old-growth forests	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB or iNaturalist records of this species within 5 miles of the BSA (CDFW 2025, iNaturalist 2025).
Reptiles				
Actinemys marmorata	northwestern pond turtle	FPT/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are five CNDDB records of this species within 5 miles of the BSA (CDFW 2025).

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
Chelonia mydas	green sea turtle	FT/None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	**Not expected to occur.** The BSA lacks suitable marine or estuarine habitat.
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There is one CNDDB record of this species within 5 miles of the BSA (CDFW 2025). There are no eBird records of this species within 5 miles of the BSA (eBird 2025).
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). There are multiple eBird records of this species within 5 miles of the BSA (eBird 2025).
Aquila chrysaetos (nesting & wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). There are multiple eBird records of this species within 5 miles of the BSA (eBird 2025).
Brachyramphus marmoratus (nesting)	marbled murrelet	FT/SE	Nests in old-growth coastal forests, forages in subtidal and pelagic habitats	**Not expected to occur.** The BSA lacks suitable old-growth or mature coastal forest habitat. There are three CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	**Not expected to occur.** The BSA is located outside the species' geographic range (Hughes 2020) although riparian habitat is present. There are no CNDDB

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
				or eBird records of this species within 5 miles of the BSA (CDFW 2025; eBird 2025).
Gymnogyps californianus	California condor	Experimental Population	Nests in rock formations, deep caves, and occasionally in cavities in giant sequoia trees (*Sequoiadendron giganteus*); forages in relatively open habitats where large animal carcasses can be detected	**Not expected to occur.** There are no CNDDB or eBird records of this species within 5 miles of the BSA (CDFW 2025; eBird 2025).
Haliaeetus leucocephalus (nesting & wintering)	bald eagle	FD/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025). There are multiple eBird records of this species within 5 miles of the BSA (eBird 2025).
Phoebastria albatrus	short-tailed albatross	FE/SSC	Nests on isolated, windswept islands of the western Pacific; extremely rare in migration offshore along the California coast	**No potential to occur.** The BSA is outside the species range, at an inland location.
Riparia riparia (nesting)	bank swallow	None/ST	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are two CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Strix occidentalis caurina	northern spotted owl	FT/ST	Nests and forages in dense, old-growth, multi-layered mixed-conifer, redwood, and Douglas-fir habitats	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present within the tree farm in the northern portion of the BSA. There are numerous CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Anarhynchus montanus (wintering)	mountain plover	BCC/SSC	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	**Not expected to occur.** The BSA is located outside the species' geographic range (Knopf and Wunder 2023) and habitat is absent or of low quality. There

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
				are no CNDDB or eBird records of this species within 5 miles of the BSA (CDFW 2025, eBird 2025).
Anarhynchus nivosus nivosus (nesting)	western snowy plover	FT, BCC/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB or eBird records of this species within 5 miles of the BSA (CDFW 2025; eBird 2025).
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Arborimus pomo	Sonoma tree vole	None/SSC	Old-growth and other forests including Douglas-fir, redwood, and montane hardwood–conifer forests	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are seven CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are four CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Martes caurina humboldtensis	Humboldt marten	FT/SSC, SE	Coastal coniferous forests	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are three CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Pekania pennanti	fisher	None/SSC	Ranges widely in forested regions; uses heavy stands of mixed species of mature trees	**Potential to occur.** The BSA is located within the species' geographic range and

Scientific Name	Common Name	Status (Federal/ State)	Habitat	Potential to Occur
				habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025).
Lasiurus frantzii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	**Potential to occur.** The BSA is located within the species' geographic range and habitat is present. There are no CNDDB records of this species within 5 miles of the BSA (CDFW 2025).

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