



Cal Water Station 11 Well (Former Dillon Beach Well)

Biological Site Assessment Report

Marin County, California



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List of Acronyms

BIOS	Biogeographic Information and Observation System
BSA	Biological Site Assessment
Cal Water	California Water Service
CCA	California Coastal Act
CCC	California Coastal Commission
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (now CDFW)
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
County	County of Marin
CRLF	California Red-legged Frog
CWA	Clean Water Act
CWP	Marin Countywide Plan
DBH	Diameter at breast height
EFH	Essential Fish Habitat
ESA	(Federal) Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
HTL	High tide line
Inventory	Endangered Plant Inventory
LCP	Marin County Amended Local Coastal Program
LUP	Land Use Plan
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NWI	National Wetland Inventory
OHWM	Ordinary High-Water Mark
Rank	California Rare Plant Ranks
RWQCB	Regional Water Quality Control Board
SCA	Stream Conservation Area
SFP	State Fully Protected Species
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WCA	Wetland Conservation Area
WRA	WRA, Inc.



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1.0 INTRODUCTION

This Biological Site Assessment (BSA) evaluates existing biological resources, potential impacts, and mitigation measures (if required) for the California Water Service (Cal Water) Dillon Beach Well Project located in Dillon Beach, in unincorporated Marin County, California (Appendix A – Figure 1). The proposed project (Project) involves after-the-fact coastal development permitting for a well (Station 11 Well) located on former Dillon Beach Resort property, which is now owned by Cal Water at Dillon Beach.

WRA reviewed the following reports and correspondence in preparation of this BSA:

- Biological Resources Evaluation for the Dillon Beach Resort, prepared by WRA, dated December 2019;
- Preliminary Biological Site Assessment, Unpermitted SGS Well, prepared by LSA, dated April 28, 2021;
- Letter from SSL Law Firm to Marin County, dated May 5, 2021;
- Letter from Marin County Planning Division to Cal Water, dated October 14, 2021;
- Supplemental Biological Resources Report and Results of Focused Plant Surveys, Unpermitted SGS Well, prepared by LSA, dated October 5, 2022;
- Habitat Restoration Plan: Dillon Beach Resort, prepared by WRA, dated October 2021;
- Staff Report: CDP Application, prepared by California Coastal Commission, dated January 21, 2021;
- Dillon Beach Resort Exhibits, prepared by California Coastal Commission, dated February 12, 2021; and
- Notice of Intent to Issue Permit, prepared by California Coastal Commission, dated February 19, 2021.

1.1 Purpose

The purpose of this report is to inform Cal Water (Client) of the results of the focused BSA that summarizes conditions within the existing Station 11 Well footprint and the existing associated access footpath (Study Area; Appendix A: **Figure 1**). The Study Area is located within a previously assessed, larger effort, summarized in the *Biological Resources Evaluation for the Dillon Beach Resort* (2019 BRE; WRA 2019). The information in the 2019 BRE is relevant and accurate as applied to this subset Study Area.

WRA's 2019 BRE was submitted to the California Coastal Commission (CCC) to support the CCC review of the Dillon Beach Resort RV Park Redevelopment, Parking Lot Management, and Habitat Restoration coastal development permit application. The CCC relied on the 2019 BRE in issuance of a coastal development permit (Application Number 2-20-0018) on February 19, 2021. The existing well location is included within the overall study area evaluated in the BRE 2019 report. The area containing the well is mapped as “developed”, a land cover classification that includes the disturbed, sandy area east of Cliff Street, opposite the Dillon Beach parking area. The well location borders non-native stands to the east and west, Cypress stands to the south, and riparian willow to the southwest as seen in Photo 1. The 2019 BRE identifies the well as being located within a stream/riparian buffer and just beyond the Environmentally Sensitive Habitat Area (ESHA) buffer of a formally delineated wetland.



This report describes the results of a review of current site photographs and information from the 2019 BRE which assessed the Study Area for: (1) presence of special-status species; (2) potential to support special-status species; and (3) the presence of other sensitive biological resources protected by local, state, and federal laws and regulations (e.g., Marin County Local Coastal Plan [LCP], California Environmental Quality Act [CEQA], and the Clean Water Act [CWA]). This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may or may not occur as a result of the Project.

1.2 Project Location

The Study Area is approximately 0.47-acre and located near Dillon Beach Resort. The Study Area is located near Cliff Street and is accessed by (and includes) the maintenance access footpath to the east. The National Wetlands Inventory Database (NWI; USFWS 2023b) records an intermittent, seasonally flooded river just outside of the Study Area, which is known as Dillon Creek. Land Cover types within the Study Area are shown in **Figure 1** (Appendix A).

1.3 Project Description

The Project seeks to complete after-the-fact coastal development permitting the Cal Water Station 11 Well, and existing well located on former Dillon Beach Resort property, which is now owned by Cal Water at Dillon Beach. Cal Water intends on continued use of the well and the existing access footpath. No new work or development is anticipated as part of this Project.

2.0 REGULATORY BACKGROUND

This report is intended to facilitate conformance of the proposed Project with the standards outlined in the Marin County Code and General Plan. In addition to the requirements of Marin County, the proposed Project may also be subject to several federal and state regulations designed to protect sensitive natural resources. Full analysis of these requirements in the context of the Project are addressed herein.

The following sections explain the regulatory context of the biological site assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Federal and State Regulatory Setting

2.1.1 Sensitive Land Cover Types

Land cover types are herein defined as those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, land cover types have identifiable boundaries that can be delineated based on changes in plant assemblages, soil or rock types, soil surface or near-surface hydroperiod, anthropogenic or natural disturbance, topography, elevation, etc. Many land cover types are not considered sensitive or otherwise protected under the environmental regulations discussed here. However, these land cover types typically provide essential ecological and biological functions for plants and wildlife, including, frequently, special-status species. Those land cover types that are considered or protected under one or more environmental regulations are discussed below.



WATERS OF THE UNITED STATES

The United States Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce and their tributaries (33 CFR 328.3). Potential wetland areas with a direct surface connection and according to the three criteria used to delineate wetlands as defined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “other waters” and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the United States generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

WATERS OF THE STATE

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a project does not require a federal permit but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

STREAMS, LAKES, AND RIPARIAN HABITAT

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGF). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term “stream” can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). “Riparian” is defined as “on, or pertaining to, the banks of a stream.” Riparian vegetation is defined as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.



SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFG 2010, CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB; CDFW 2022a). California Natural Diversity Database (CNDDDB) vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G).

ENVIRONMENTALLY SENSITIVE HABITAT AREAS

The California Coastal Act Section 30107.5 defines ESHA as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." Coastal Act Section 30240 protects ESHAs from "significant disruption of habitat values," limits allowable land uses within ESHAs, and requires adjacent uses to be designed to be compatible with habitat benefits provided by ESHAs. The Coastal Act includes wetlands as ESHAs but does not specifically define every vegetation type defined as an ESHA. Instead, the CCC often delegates the responsibility for administering the California Coastal Act to local municipalities through the approval of Local Coastal Programs (LCPs). Many LCPs provide more specific lists of communities that are considered ESHAs. More information about ESHAs defined by the local LCP is provided in Section 2.2 below.

2.1.2 Special-status Species

PLANTS

Special-status plants include taxa that have been listed as endangered or threatened, or are formal candidates for such listing, under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA). The California Native Plant Protection Act (CNPPA) lists 64 "rare" or "endangered" and prevents "take", with few exceptions, of these species. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under the California Environmental Quality Act (CEQA). Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. A description of the CNPS Ranks is provided in Appendices B and C.

WILDLIFE

As with plants, special-status wildlife includes species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by ESA. The CFGC designates some species as Fully Protected (SFP), which indicates



that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA and are therefore considered special-status species. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 (MBTA) and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

CRITICAL HABITAT, ESSENTIAL FISH HABITAT, AND WILDLIFE CORRIDORS

Critical habitat is a term defined in the ESA as a specific and formally designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. Note that designated critical habitat areas that are currently unoccupied by the species, but which are deemed necessary for the species' recovery are also protected by the prohibition against adverse modification.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for conservation and management of fishery resources in the U.S. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass [*Zostera* spp.]), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with the National Marine Fisheries Service (NMFS).

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Marin County Regulatory Setting

In Marin County, a sensitive resource includes "jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, wildlife nurseries and nesting areas, and wildlife movement corridors. The County development review process typically requires a site assessment by qualified professionals to confirm whether any sensitive resources could be affected . . ." Furthermore, The California Coastal Act (CCA) defines ESHAs under Section 30107.5 and protected under section 30240 and include wetlands, rivers, streams and lakes, and riparian areas. For the purposes of this report, WRA has taken into consideration any areas that may meet the definition of any ESHA defined by the CCA, listed in the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* ("California Coastal Commission guidelines", CCC 1981), or the Marin County Amended Local Coastal Program (LCP) Land Use Plan (LUP) (Marin County 2019).



The CCA defines an ESHA as follows:

"Environmentally sensitive habitat area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. "

The CCC Guidelines discuss the various definitions for specific types of ESHAs, including wetlands, streams and riparian areas. Many of these definitions are synonymous with the definitions described above. Additional definitions are provided below.

2.2.1 Coastal Act Wetlands

The Coastal Act defines wetlands as:

"Wetland means land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

(Public Resources Code § 30121)

CCC Administrative Regulations (Section 13577 [b]) provide a more explicit definition:

"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats."

The Coastal Act defines the upland limit of wetlands as:

(1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; (2) the boundary between soil that is predominantly hydric and soil that is predominantly non-hydric; or (3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not."

2.2.2 Coastal Act Streams and Rivers

The Marin County LCP provides special protections for USGS blue-line streams, and establishes buffers to protect streams from the impacts of adjacent uses including development impacts from construction and post-construction activities within the LCP Unit II Area. Stream buffers are defined by the LCP as: "the area covered by riparian vegetation on both sides of the stream and the area 50 feet landward from the edge of the riparian vegetation." The LCP states that the buffer shall be the wider of the following on both sides of the stream: (a) the area 50 feet landward from the other edge of the riparian vegetation; or (b) the area 100 feet landward from the top of the stream banks; or (c) as recommended by the biological assessment."



2.2.3 Coastal Act Riparian Habitats

While riparian vegetation is not defined specifically in the California Coastal Act, it is defined by the LCP as the stream itself and the riparian vegetation growing adjacent to it. Common plant genera associated with this vegetation type in Unit II of the Coastal Zone within Marin County include maple (*Acer* spp.), alder (*Alnus* spp.), ash (*Fraxinus* spp.), and willow (*Salix* spp.). For the purposes of determination of status under the Coastal Act, we define riparian habitat as “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG 1994). This definition is synonymous with the CDFW definition described above.

2.2.4 Coastal Act Terrestrial ESHA

The Marin County LCP/LUP (2019) defines terrestrial (non-aquatic) ESHA as habitats of plant and animal species listed under the Federal or California Endangered Species Act and existing populations of the plants listed as 1B or 2 by the California Native Plant Society; coastal dunes; groves of trees that provide colonial nesting and roosting habitat for butterflies or other wildlife; and riparian vegetation that is not associated with watercourse. Buffers for terrestrial ESHA shall be 50 feet, a width that may be adjusted by the County as appropriate to protect the habitat value of the resource, but in no case shall be less than 25 feet.

2.2.5 Marin County Stream Conservation Areas

In Marin County, a Stream Conservation Area (SCA) is designated along perennial, intermittent, and some ephemeral streams. The SCA consists of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks equaling 100 feet from TOB or 50 feet from edge of riparian, whichever is greater. With regard to ephemeral streams, such streams are subject to the SCA policies if it (a) supports riparian vegetation for a length of 100 feet or more, and/or (b) supports special status species and/or a sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream. For those ephemeral streams that do not meet these criteria, a minimum 20-foot development setback shall be required. Development activities that may occur within a SCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

2.2.6 Marin County Wetland Conservation Areas

In Marin County, a Wetland Conservation Area (WCA) is designated around all Corps jurisdictional wetlands. The WCA consists of the wetland itself and a strip of land extending laterally outward from the wetland for a distance of 100 feet or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Development activities that may occur within a WCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

2.2.7 Marin County Protected and Heritage Trees

The Marin County Local Coastal Plan – Implementation Plan defines “protected” and “heritage” which are comprised of native tree species including but not limited to: native oaks (*Quercus* spp.), willows (*Salix* spp.), Sargent cypress (*Hesperocyparis sargentii* [*Cupressus* s.]), and madrone (*Arbutus menziesii*) with a minimum diameter at breast height (DBH; measured 4.5 feet above grade) of six inches, and most other native tree species, including but not limited to Douglas fir (*Pseudotsuga menziesii*) and California bay (*Umbellularia californica*) with a



minimum DBH of 10 inches. Heritage trees are defined as native oaks, willows, Sargent cypress, and madrone with a minimum DBH of 18 inches, and most other native tree species with a minimum DBH of 30 inches¹. Removal of protected and/or heritage trees as defined above are subject to coastal development permitting requirements.

¹ Marin LCP Protected and Heritage Tree list treats the same species and sizes of trees as Protected and Heritage Trees.



3.0 ASSESSMENT METHODS

This BSA relies on previous reports, information, and photographs that assessed the Study Area provided by Cal Water to represent current conditions of the site. These reports, listed in Section 1.0, include the WRA 2019 BRE, a *Preliminary Biological Site Assessment* (LSA 2021), and a *Supplemental Biological Resources Report and Focused Plant Survey* (2022 LSA Report; LSA 2022).

The previous reports reviewed literature and existing databases regarding potential special-status species and sensitive land cover types in the Study Area. Additionally, the previous assessments traversed the Study Area on foot to determine (1) plant communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) determine the approximate location and extent of ESHAs, including wetlands, streams and riparian areas which may be subject to regulation under the California Coastal Act.

Additionally, literature and databases were reviewed to assess the potential for sensitive land cover types and special-status species, including:

- Soil Survey of Marin County, California (USDA 1985)
- Tomales 7.5-minute quadrangle (USGS 2021)
- Contemporary aerial photographs (Google Earth 2023)
- Historical aerial photographs (NETR 2023)
- National Wetlands Inventory (NWI, USFWS 2023a)
- California Natural Diversity Database (CNDDB, CDFW 2023a)
- CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2023b)
- California Native Plant Society Electronic Inventory (CNPS 2023a)
- Consortium of California Herbaria (CCH 2023)
- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- The Marin County Breeding Bird Atlas (Shuford 1993)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- eBird Online Database (eBird 2023)
- A Manual of California Vegetation Online (CNPS 2023b)
- California Natural Community List (CDFW 2023a)

Database searches for special-status species (i.e., CNDDB, CNPS) focused on the Bodega Head, Tomales, and Valley Ford USGS 7.5-minute quadrangles. See Appendix C for special-status species database outputs.

3.1 Land Cover Types

3.1.1 Terrestrial Land Cover Types

As part of the 2019 BRE, terrestrial land cover types were mapped across the Study Area and evaluated to determine if such areas have the potential to support special-status plants or wildlife. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation) and follow the *A Manual of California Vegetation, Online Edition* (CNPS 2023b). Overall site conditions remain unchanged in 2023. Vegetation alliances or associations



(natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled (S1/G1), imperiled (S2/G2), or vulnerable (S3/G3), were evaluated as sensitive as part of this evaluation using the CDFW's list of *California Sensitive Natural Communities* (CDFW 2023a). Additional information can be found in the 2019 BRE.

3.1.2 Aquatic Resources

Aquatic resources include Waters of the U.S., Waters of the State, and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC, respectively. Marin County mandates setbacks from these aquatic resources, and therefore requires mapping of the outward extent of such features.

The 2019 BRE also included a formal wetland delineation following the methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region* (Corps 2008). During the delineation, if streams potentially jurisdictional under the CWA and/or the CFGC were noted on a site, they were delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high-water mark would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to determine if these areas would be considered riparian habitat by the CDFW following *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994). Finally, all streams were assessed to determine if they meet the criteria of an SCA per the Marin Countywide Plan (CWP).

3.2 Special-status Species

3.2.1 General Assessment

Database searches for known occurrences of special-status species focused on the 7.5-minute USGS quadrangles mentioned above for special-status species. Findings in this report are based on assessments from work conducted for the 2019 BRE and the 2022 LSA Report. The Study Area has remained largely unchanged, confirming that previous determinations are still applicable.

Suitable habitat conditions are based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.



- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDDB, other reports) on the site in the recent past.

Methods for the assessments are described below. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2.

3.2.2 Special-status Plants

This assessment utilizes the methods and findings from the 2019 BRE and the 2022 LSA Report. Focused assessments of special-status species were conducted within the Study Area during the LSA Focused Plant Survey that occurred on May 27, 2022.

3.2.3 Special-status Wildlife

This assessment utilizes the methods and findings from the 2019 BRE. Habitat elements required or associated with certain species (e.g., northern spotted owl) or species groups (e.g., bats, anadromous fish) were searched for and noted. Such habitat elements include but are not limited to plant assemblages and vegetation structure; stream depth, width, hydro-period, slope, and bed-and-bank structure; rock outcrops, caves, cliffs, overhangs, and substrate texture and rock content; history of site alteration and contemporary disturbances; etc. (WRA 2019).

3.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors

In addition to the 2019 BRE, the USFWS Critical Habitat Mapper (USFWS 2023c) and the NMFS Essential Fish Habitat Mapper (NMFS 2023) were queried to determine if critical habitat for any species or EFH, respectively, occurs within the Study Area. To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2010). Additionally, aerial imagery (Google 2023) for the local area was referenced to assess if local core habitat areas were present within or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions noted from the 2019 BRE.

4.0 ASSESSMENT RESULTS

4.1 Land Cover Types within the Study Area

Land use within the Study Area is previously disturbed open space and developed areas. Developed area (access footpath), coastal woodland (cypress), and non-native stands are predominating land cover types within the Study Area. Dillon Creek is located to the south of the Study Area, flows east to west, and can influence on-site hydrology. Biological communities within the Study Area are depicted in Appendix A, **Figure 1**. Appendix B provides a list of species-status species that have been documented in the vicinity and summarizes the potential for occurrence for each of these species based on observed habitat suitability and proximity of known occurrences. A delineation of CCC/LCP potential jurisdictional resources in the Study Area was performed during the site visit by WRA on October 23, 2019. There are no potentially jurisdictional resources within the Study Area; however, buffers from off-site potentially jurisdictional features overlap the Study Area and are included in **Figure 1**, Appendix A.



The Project Area consists of five land cover types: Non-native Stands, Cypress Stands, Riparian Willow, Eucalyptus, and Developed. Descriptions of each land cover type are provided below and are shown on **Figure 1** (Appendix A). Representative photographs of each land cover type are included as Appendix C.

Table 1. Vegetation Communities and Other Land Cover Types

COMMUNITY / LAND COVERS	SENSITIVE STATUS	RARITY RANKING	ACRES STUDY AREA	WITHIN
TERRESTRIAL / COMMUNITY LAND COVER				
Non-native Stands	None	None	0.05	
Cypress Stands	None	None*	0.03	
Riparian Willow	ESHA	G4 S4	0.02	
Eucalyptus	None	None	0.15	
Developed	None	None	0.22	

*Native Monterey Cypress (*Hesperocyparis macrocarpa*) is endemic to headland and sheltered areas on granitic substrates in Monterey County. The land cover type is only considered special status in native occurrences. The Study Area does not contain a native occurrence of this species.

4.1.1 Terrestrial Land Cover Types

Terrestrial land cover types in the Study Area are described in detail below. Of these terrestrial land cover types, only Riparian Willow classifies as a sensitive natural community.

NON-SENSITIVE BIOLOGICAL COMMUNITIES

Non-native Stands (several vegetation alliances). Rank: None.

The predominant non-native stand cover within the Study Area consists of ice plant mats (*Mesembryanthemum* ssp. – *Carpobrotus* ssp. Herbaceous Semi-Natural Alliance). Ice plant mats occur on bluffs, disturbed land, and sand dunes of immediate coastlines and are distributed throughout much of the California coast, inland range, and Sacramento-San Joaquin River delta (CNPS 2023b). Other non-native stands within the Study Area are dominated by upright veldt grass, ornamental landscaping, and black mustard (*Brassica nigra*). Non-native stands within the Study Area border developed area and footpath that traverses the site.

Cypress Stands (Monterey cypress stands [*Hesperocyparis macrocarpa*] Woodland Special Stands. Rank: S1 G1.

Native Monterey cypress (*Hesperocyparis macrocarpa*) stands are endemic to headland and sheltered areas on granitic substrates in Monterey County near Monterey Peninsula and Point Lobos (CNPS 2023b). However, this species is considered moderately invasive in other parts of California where it has been widely planted and naturalized outside its native range (Cal-IPC 2023). As such, cypress stands within the Study Area are not native and are planted windbreaks and/or have spread from planted areas. Cypress stands are located on level to gradual sloping areas adjacent to developed area, footpath, and along the riparian corridor. Understory consists of sparse to moderate vegetation cover consisting predominately of herbaceous plant species.



Eucalyptus (Eucalyptus – tree of heaven – black locust groves [*Eucalyptus* spp. *Ailanthus altissima* – *Robinia pseudoacacia*] Semi-Natural Woodland Stands). Rank: None.

Eucalyptus (*Eucalyptus* spp.) groves are naturalized on uplands, valleys, and adjacent to streams, lakes, and levees throughout California (CNPS 2023b). Within the Study Area, eucalyptus forests are remnant windbreak plantings characterized by dense, tall, nearly pure stands between Dillon Beach Road and the Dillon Creek riparian corridor. All stands are dominated by blue gum (*Eucalyptus globulus*) in the canopy. The understory has sparse cover, consisting of species such as upright veldt grass (*Ehrharta erecta*) and pride of madeira (*Echium candicans*). Eucalyptus bark shed and leaf litter is often dense.

Developed (no vegetation alliance). Rank: None.

The developed portion of the Study Area is a disturbed area which contains the well water facilities and is dominated by non-native species such as ice plant (*Carpobrotus edulis*, California Invasive Plant Council [Cal-IPC] High), European beach grass (*Ammophila arenaria*, Cal-IPC High), false ice plant (*Conicosia pugioniformis* Cal-IPC Limited), and assorted annual grasses. This large, somewhat unvegetated sandy area east of Cliff Street provides access to well water facilities.

SENSITIVE BIOLOGICAL COMMUNITIES

Riparian Willow (Arroyo Willow Thickets [*Salix lasiolepis*] Shrubland Alliance). Rank: G4 S4).

Arroyo willow thickets are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2023b). Within the Study Area, an area approximately 50 to 100-feet wide of riparian willow was mapped along Dillon Creek east of Cliff Street. The overstory is open and consists of arroyo willow (*Salix lasiolepis*). Riparian willow is potentially under the jurisdiction of the RWQCB and CDFW, and considered an ESHA by the CCA.

4.1.2 Off-site Aquatic Resources

A delineation of the Study Area and surrounding area was conducted on October 23, 2019. No Corps, RWQCB, or CCC wetlands were documented within the Study Area. A seasonal wetland was located adjacent to Dillon Creek, outside of the Study Area; the LCP buffer for the wetland overlaps portions of the Study Area (Appendix A. **Figure 1**). No standing water was observed within the wetland during the WRA October 23, 2019, site visit. The vegetation within the wetland was dominated by saltgrass (*Distichlis spicata*) and rabbitsfoot grass (*Polypogon monspeliensis*). In addition, no hydric soil or hydrology indicators were observed at the time of the 2019 WRA site visit. Dillon Creek is a USGS blue-line perennial stream that runs the outside of the Study Area east to west and seasonally breaches the beach dam that naturally forms and flows into the Pacific Ocean. The LCP buffer for Dillon Creek overlaps portions of the Study Area (Appendix A. **Figure 1**). Dillon Creek is not documented to support protected fish.

4.2 Special-status Plant Species

Based on a search of the databases provided in the methods section above, 68 special-status plant species have been documented within the vicinity of the Study Area (defined as the Valley Ford, Bodega Head, Two Rock, Point Reyes NE, Inverness, Drakes Bay and Tomales 7.5-minute USGS quadrangles). Twenty-five special-status species were determined to have a moderate or



high potential to occur in the Study Area, and the remaining species were eliminated for one or more of the following reasons:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g., below elevation, coastal environ) from the documented range of the special-status plant species;
- The historical landscape and/or habitat(s) of the Study Area were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

Focused assessments of special-status species were conducted within the Study Area during the LSA Focused Plant Survey that occurred on May 27, 2022. All special-status species assessed to have moderate to high potential to occur in the Study Area are summarized in Table 2, below.

The WRA (2019) report describes various special-status species as having potential to occur in the larger, approximately 22-acre study area. The LSA (2021) report focuses on a smaller area and concludes that habitat conditions surrounding the existing well do not appear to support essential microhabitat conditions for any special-status species due to ongoing disturbance associated with off-road vehicle use. In 2022, LSA conducted the follow-up focused rare plant survey and observed one special-status plant species, San Francisco spineflower (*Chorizanthe cuspidata* var. *cuspidata*), in a sandy area at least 30 feet north of the existing well location and primarily outside of the Study Area. This plant is a California Rare Plant Rank List 1B.2 plant species and is therefore protected as an Environmentally Sensitive Habitat Area (ESHA) with a 25- to 50-foot buffer.

Table 2. Special-status plant species with moderate or high potential to occur within the Study Area

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
San Francisco Bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 5 to 705 feet (3 to 215 meters). Blooms Apr-Jul (Aug).	Present. Suitable coastal dune habitat is present adjacent to the Study Area. This species was observed along the northern edge of the access footpath in 2022.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
harlequin lotus <i>Hosackia gracilis</i>	Rank 4.2	Broadleaved upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley, and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest that could support this species. This species was not observed during the 2022 rare plant survey.
Baker's goldfields <i>Lasthenia californica</i> <i>ssp. bakeri</i>	Rank 1B.2	Closed-cone coniferous forest (openings), coastal scrub, meadows and seeps, marshes, and swamps. Elevation ranges from 195 to 1705 feet (60 to 520 meters). Blooms Apr-Oct.	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest which could support this species. This species is closely associated with openings in immediate coastal headlands. This species was not observed during the 2022 rare plant survey.
marsh microseris <i>Microseris paludosa</i>	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley, and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun (Jul).	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest. The nearest documented occurrence is 0.20 miles north of the Study Area (CDFW 2023a). This species was not observed during the 2022 rare plant survey.

All the special-status plant species identified by WRA as having potential to occur should have been identifiable during the time the LSA focused rare plant survey. Therefore, San Francisco spineflower is the only special-status plant anticipated to occur in the close vicinity of the well; the 2022 mapped population occurs along a small portion of the northern edge of the maintenance access footpath.

4.3 Special-status Wildlife Species

Based upon a review of the resources and databases listed in Section 3.2.1, 48 special-status wildlife species have been recorded in the vicinity of the Study Area. The potential for each of these species to occur in the Study Area is summarized in Table 2.

No special-status wildlife species were observed in the Study Area during the WRA 2019 site assessment. The Study Area has the potential to support five special-status (or otherwise sensitive) wildlife species. The remaining special-status wildlife species are unlikely or do not have the potential to occur within the Study Area due to one or more of the following reasons:

- Aquatic habitats (e.g., ponds, estuaries) necessary to support the special-status wildlife species are not present in the Study Area.



- Vegetation habitats (e.g., mixed forest, open grasslands) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area.
- Physical structures and vegetation (e.g., unsealed buildings, tall cliffs) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area.
- Host plants (e.g., dog violet, harlequin lotus) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area.
- Historic and/or contemporary disturbance (e.g., human visitation, intensive mechanical noise) deter the presence of the special-status wildlife species from occupying the Study Area.
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife (bird) species documented local nesting range.

The four special-status species with the potential to occur within the Study Area are described below.

Table 3. Special-status wildlife species with moderate or high potential to occur within the Study Area

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
white-tailed kite <i>Elanus leucurus</i>	CFP	Year-round resident of coastal and valley lowlands. Commonly found in savanna, open woodlands, marshes, grasslands, partially cleared lands, and cultivated fields. Nests in a variety of trees. Preys on small diurnal mammals and other small vertebrates.	Moderate Potential. The Study Area provides some open areas for foraging and suitable nest trees; this species has been observed in and adjacent to the Dillon Beach community (eBird 2019).
(Brewster's) yellow warbler <i>Setophaga petechial</i>	SSC	Summer resident, nesting in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in suitable montane shrubbery. Occurs widely during migration.	Moderate Potential. Willow stands along Dillon Creek and immediately adjacent to the Study Area provide suitable nesting habitat.



California red-legged frog <i>Rana draytonii</i>	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	Unlikely Breeding Habitat. Moderate Dispersal Potential. This species is known from the vicinity of the Study Area, with three CNDDB occurrences within 1 mile; the nearest of these is located < 0.1 mile to the south (CDFW 2023). Breeding within the Study Area is unlikely. However, individuals may disperse/move through portions of the Study Area, particularly during the rainy season.
monarch butterfly <i>Danaus plexippus</i>	none; (winter roosts protected by CDFW and CCC)	Winter roost sites extend along the coast from northern Mendocino County to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	Moderate Potential. On-site stands of eucalyptus and cypress provide potential roost trees.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential (Presence Unknown).

White-tailed kites are resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. The Study Area provides suitable year-round habitat for white-tailed kites, including stands of oaks and other trees for nesting and open areas in close proximity for foraging. There are observations of white-tailed kites within and near the Dillon Beach community (eBird 2023), and a variety of trees may be used for nesting. This species was not observed during the WRA 2019 site visit, though that does not rule out its potential presence.

(Brewster's) Yellow warbler (*Setophaga petechia brewsteri*), CDFW Species of Special Concern. Moderate Potential (Presence Unknown).

The yellow warbler is a neotropical migrant bird that is widespread in North America, but has declined throughout much of its California breeding range. The Brewster's (*brewsteri*) subspecies is a summer resident and represents the vast majority of yellow warblers that breed in California. West of the Central Valley, typical yellow warbler breeding habitat consists of dense riparian vegetation along watercourses, including wet meadows, with willow growth especially being favored (Shuford and Gardali 2008). Insects comprise most of the diet. This species has the potential to nest in willow stands along the perennial stream (Dillon Creek) that is just outside of the Study Area.

California red-legged frog (*Rana draytonii*). Federal Threatened, CDFW Species of Special Concern. Moderate Potential (Presence Unknown).

California Red-legged frog (CRLF) is the only native “pond frog” found throughout much of California and was listed as threatened by the USFWS in 1996. Suitable CRLF breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or riparian vegetation (USFWS 2010). Such habitats must hold water for a minimum of 20 weeks, and include ponds (ephemeral and perennial), streams/creeks (ephemeral and perennial), seasonal wetlands, springs, seeps, man-made features (e.g., stock ponds, roadside ditches), marshes, dune ponds, and lagoons. Dependent upon local conditions, CRLF may complete its entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages), or utilize multiple habitat types. In aquatic habitats that dry down seasonally, CRLFs often undergo aestivation (a period of inactivity) during the dry months, over-summering in small mammal burrows, moist leaf litter, incised stream channels, or large cracks in the bottom of dried ponds (Jennings and Hayes 1995). Adult and sub-adult (newly metamorphosed) CRLFs may disperse from breeding habitats to nearby riparian and/or aestivation habitats in the summer. Conversely, during the rainy season CRLF may migrate from aestivation sites to suitable breeding habitat. During such dispersals, frogs can travel over one mile over a variety of topographic and habitat types (Bulger et al. 2003). Upland dispersal habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

CRLF is known from the general vicinity of the Study Area, with three CNDDDB occurrences located within 1 mile. As mapped, the nearest of these locations is located within approximately 170 feet southeast of the Study Area’s southern boundary (immediately south of the footprint of the former marine lab), and involved documentation of (aquatic) breeding in a “dune slack wetland” in 2002 (CDFW 2023b). Both WRA’s field observations and a review of aerial photography suggest that this occurrence may be inaccurately mapped, and that the subject dune wetland may actually be located approximately 520 feet south of the Study Area. Regardless, the Study Area is within typical dispersal distance of this documented breeding feature. The Study Area itself is unlikely to support CRLF breeding; primarily due to a lack of stagnant/still, sufficiently deep freshwater at the appropriate time of year (later winter and spring, when breeding typically occurs). The off-site perennial stream (Dillon Creek) presumably has unfavorable hydrology, i.e., flow too strongly during the late winter and spring, and subsequently has insufficient depth/volume during low-flow periods. However, this stream may function as aquatic non-breeding habitat, and adjacent vegetated areas may be used for shelter. CRLF presence within the Study Area is most likely during rainy periods (when adults move overland) as well as periods of juvenile dispersal from breeding ponds (typically in summer).

Monarch butterfly (*Danaus plexippus*). No status; winter roosts protected by CDFW. Moderate Potential (for on-site winter roosting).

Monarch butterfly winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves, with nectar and water sources nearby, and are often on south-, southwest-, or west-facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). There is a documented CNDDDB occurrence of monarch winter-roosting within the Study Area, i.e., within trees along the off-site creek (presumably cypresses and/or eucalyptus). However, this site was only confirmed to support roosting in 1987; roosting was not observed during subsequent winter surveys in 1988 and 1990-



1991. Stands of eucalyptus and cypress within the Study Area continue to provide potential roost trees.

4.3.1 Nesting Birds

Non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Study Area (namely trees) for nesting. To avoid impacts to nesting birds, WRA recommends ground-disturbing activities be performed from August 16 to January 31, outside of the general nesting bird season. If such is not feasible, a pre-construction nesting bird survey by a qualified biologist will be performed no more than 14 days prior to the initiation of tree removal. The survey should cover the Study Area and surrounding areas (as accessible) within 250 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer will be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

4.4 Critical Habitat and Wildlife Corridors

Wildlife movement between suitable habitat areas typically occurs via wildlife movement corridors. The primary function of wildlife corridors is to connect two larger habitat blocks, also referred to as core habitat areas (Beier 1992, Soule and Terborgh 1999). Aerial imagery of the Study Area and surrounding lands was examined for the potential presence of wildlife movement corridors. The Study Area is surrounded by development to the north and south, open space to the east, and beach habitat to the west. No native wildlife nursery sites are present in the Study Area. In addition, the Study Area is not mapped within essential habitat connectivity areas (CDFW 2010). While common wildlife species presumably utilize the site to some degree for movement at a local scale, the Study Area itself does not provide corridor functions beyond connecting similar disturbed land parcels in surrounding areas. Moreover, no new impacts are being proposed that could change wildlife movement or create impediments to existing movement such as fencing, new roads, or other barriers.

4.5 Marin County Tree Ordinance

Tree removal requires a permit from Marin County based on Section 22.62.040 of the Marin County Code if it falls within one or more of the following conditions:

- More than two (2) “Protected Trees” are being removed from a developed lot in a 12-month period;
- The tree qualifies as a “Heritage Tree”;
- The tree is a “Protected Tree” or “Heritage Tree” and is located in a Stream Conservation Area or a Wetland Conservation Area;
- Any removal of “Protected Trees” on a vacant lot; and
- The trees proposed for removal do not qualify for an exemption under Section 22.62.040 of the Marin County Code (see below).

A protected or heritage tree is defined as an individual tree that is included in the species list provided in the Marin County Code and meets the requirements for DBH. Since no tree removal is proposed as part of the Project (continued use of the existing Station 11 Well and access footpath), these ordinances do not apply.



4.6 Stream/Wetland Conservation Area

As described previously, a perennial stream (Dillon Creek) and a seasonal wetland are located just outside of the Study Area (**Figure 1** – Appendix A). The seasonal wetland had indicators of wetland vegetation, but no indicators of wetland hydrology or soils during the delineation that was conducted by WRA. Dillon Creek is associated with a ravine area that runs from east to west. Approximately 1,409 linear feet (0.232 acre) of non-wetland waters was mapped during the October 23, 2019, site visit. During the site visit, the wetted width of Dillon Creek ranged from 4 feet to 30 feet. The 100-foot setback from the top of bank as described in the LCP is also shown in **Figure 1** – Appendix A.

5.0 PROJECT ANALYSIS AND RECOMMENDATIONS

The proposed project (Project) involves after-the-fact coastal development permitting for the Cal Water Station 11 Well, an existing unpermitted well located on former Dillon Beach Resort property, which is now owned by Cal Water at Dillon Beach. Based on the site visit and that the proposed Project includes the continued operation of the existing well, the project (continued well operation and maintenance access) would not result in direct or indirect impacts to special-status plant or wildlife species, sensitive biological communities, or aquatic features.

5.1.1 Sensitive Biological Communities

ESHA BUFFERS/SETBACKS

Potential ESHA buffer adjustments have been analyzed in accordance with LCP Policies C-BIO-19 (Wetland Buffer Adjustments and Exceptions) and C-BIO-25 (Stream Buffer Adjustments and Exceptions). The analysis applies the relevant policy criteria to support any proposed modifications to standard buffer distances and identifies the resulting adjusted buffer widths. The assessment has also been expanded to encompass the full scope of the existing Station 11 Well and associated access footpath, to ensure that ESHA buffer considerations are evaluated across all project components.

Pursuant to Marin County Local Coastal Program (LCP) Policies C-BIO-19 and C-BIO-25, buffer adjustments may be considered where strict application of standard ESHA setbacks is not necessary to protect the adjacent resource. In this case, the existing, unpermitted well has operated continuously for approximately 35 years without documented adverse effects to the adjacent riparian, seasonal wetland, and stream ESHAs. The existing well is located within the mapped standard buffers but outside of the riparian corridor, wetland, and perennial creek ESHA itself. Policy C-BIO-19 requires protection of ESHA from significant disruption of habitat values. Policy C-BIO-25 allows flexibility in buffer widths where site-specific analysis demonstrates that a reduced buffer will not result in degradation of habitat functions or water quality. Given the well's long-standing operation, the absence of observed resource impacts, and its location outside the defined ESHA features, a site-specific buffer adjustment may be supported and can incorporate avoidance measures and best management practices to prevent indirect effects, such as erosion, discharge, or vegetation removal. This approach would be consistent with the LCP's intent to protect ESHA while recognizing existing development.

Policy C-BIO-3.3 allows buffer reductions where site-specific circumstances show that the standard buffer width is not necessary to protect ESHA habitat values, provided that the reduced buffer will continue to protect the sensitive resource. Given the long-standing operation of existing built conditions, the absence of observed resource impacts, and its location outside



the defined ESHA features, a site-specific buffer adjustment may be supported. Collectively, these factors demonstrate that the proposed buffer adjustment would not result in significant disruption of ESHA habitat values and remains consistent with the protective intent of Policy C-BIO-3.3.

The following is an outline of the existing and requested reduced ESHA buffers for on- and off-site features as shown in **Figure 1** (attached):

- **Dillon Creek (perennial stream):** a 100-foot buffer associated with the stream is reflected in **Figure 1**. The stream is entirely outside of the Study Area. However, the ESHA buffer for the stream extends into the Study Area.
 - Based on the well and the associated access footpath's longstanding operation and lack of negative effects on the perennial stream, a reduced buffer of 50-feet would be consistent with LCP policies (**Figure 2**, attached).
- **The riparian area:** A 50-foot buffer from the riparian area is reflected in **Figure 1**. A small amount of riparian habitat is located within the Study Area. However, the ESHA buffer from the riparian area extends into the Study Area.
 - Based on the well and the associated access footpath's longstanding operation and lack of negative effects on the nearby riparian habitat, a reduced buffer of 25-feet would be consistent with LCP policies (**Figure 2**).
- **The seasonal wetland:** A 100-foot buffer from the seasonal wetland is reflected on **Figure 1**, attached. The seasonal wetland is located outside of the Study Area. However, the ESHA buffer for the seasonal wetland extends into the Study Area.
 - Based on the well's longstanding operation and lack of negative effects on the seasonal wetland, a reduced buffer of 50-feet would be consistent with LCP policies (**Figure 2**).

As a result of the continued existence of the well in its current location, the Project may facilitate a net environmental improvement over existing conditions by implementing measures such as the following (Marin LUP; C-BIO-25):

- Elimination of on-site invasive species.
- Increasing native vegetation cover (e.g., expand continuous riparian vegetation cover; reduce turf areas; provide native groundcover, shrubs and trees; etc.);
- Other measures that reduce overall similar site-related environmental impacts.

Additionally, the LCP states that accessways and trails where it is not feasible to avoid the ESHA should incorporate measures to minimize intrusions and incorporate the least impacting routes. The Study Area currently employs an access route from the east that avoids the riparian and San Francisco spineflower ESHA, occurring within the buffers for those areas.

ACCESS FOOTPATH

Under the Coastal Act, Section 30240 states, "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and only uses dependent on those resources shall be allowed within those areas." The Study Area is located within the standard LCP buffer of nearby, off-site ESHAs, including a perennial stream (locally referred to as Dillon Creek), riparian areas (willow and cypress), a seasonal wetland, and San Francisco spineflower. LCP Policies applicable to the evaluation of the existing access footpath are outlined below.

C-BIO-2.1 (Resource Dependent Uses)

Protect ESHAs against disruption of habitat values, and only allow uses within those areas that are dependent on those resources or otherwise specifically provided in C-BIO-



14 (Wetlands), C-BIO-15 (Diking, Filling, Draining and Dredging) or C-BIO-23 (Coastal Streams and Riparian Vegetation). Disruption of habitat values includes when the physical habitat is significantly altered or when species diversity or the abundance or viability of species populations is reduced. The type of proposed development, the particulars of its design, and its location in relation to the habitat area, will affect the determination of disruption (Marin County).

WRA Analysis

The existing access footpath is not located within an ESHA; the alignment avoids both willow stands and spineflower ESHA. Given that the existing footpath has been in operation for more than 35 years and the nearby ESHAs have increased in size and distribution, the location of the well and access footpath does not appear to have a deleterious effect on the health and distribution of riparian, stream, or seasonal wetland ESHAs.

C-BIO-2.3 (Avoid Inhibition of Wildlife Movement)

Avoid fence types, roads, and structures that significantly inhibit wildlife movement, especially access to water (Marin County).

WRA Analysis

The access footpath does not include any design elements which would restrict or significantly inhibit wildlife movement, including access to water. The footpath is a flat, pervious surface.

5.1.2 Special-status Plant Species

San Francisco spineflower is the only special-status plant anticipated to occur in the close vicinity of the well; the 2022 mapped population occurs along a small portion of the northern edge of the maintenance access footpath (LSA 2022, Appendix A). All other special-status plant species which were determined to have moderate or high potential to occur are presumed absent based upon a rare plant survey that occurred during the period in which these species would have been identifiable. Well operation and maintenance activities are planned for existing developed areas, particularly the pre-existing access footpath which avoids the populations of San Francisco spineflower mapped in the vicinity of the Study Area. Therefore, access and maintenance within the Study Area will not result in impacts to special-status plant species. No further actions are recommended for special-status plants.

5.1.3 Special-status and non-status birds

Two special-status bird species (white-tailed kite and yellow warbler) were determined to have moderate potential to nest within the Study Area. Additionally, non-status birds with baseline protections under the MBTA and CFGC also likely nest within the Study Area, including in trees and shrubbery, on buildings/structures, and other substrates. Given that no new development is included in the ongoing use of the well, no adverse impacts to special-status and non-status nesting birds are anticipated.

5.1.4 California red-legged frog

There is a documented CRLF breeding occurrence in close proximity to the Study Area, and the species may occur within the Study Area during periods of movement and dispersal, including using the off-site stream (and adjacent vegetation) as non-breeding habitat. CRLF is listed under



the federal ESA which provides protection not only to individual frogs (and other life stages, i.e., eggs and larvae) but also to occupied habitat, in particular aquatic breeding features but potentially other habitat elements as well (not directly associated with breeding). Within the context of the ESA generally, proposed activities with a reasonably high likelihood of resulting in “take” (injury, mortality, “harassment”) of a federal listed species typically require consultation with the USFWS. Given that no new development is proposed as part of the ongoing use of the well, no adverse impacts to CRLF are anticipated.

5.1.5 Monarch butterfly

Known winter (communal) roost sites for monarchs have some degree protection by CDFW and impacts to known roost sites (i.e., trees and trees groves used for roosting) are considered under CEQA. The current status of the on-site tree groves as monarch winter roosts is unknown. If tree removal is trimming is required to accommodate the continued well operation, WRA recommends that a more detailed habitat assessment/survey effort for roosting monarchs within and directly adjacent to the Study Area be performed; this assessment/survey should occur during the winter months (December and January) when monarchs are potentially roosting. If a communal winter roost is identified during the assessment/survey, CDFW should be consulted regarding measures to avoid or otherwise minimize impacts to the roost. That said, currently no new development is proposed as part of the ongoing use of the well and, as such, no adverse impacts to monarch butterfly are anticipated.



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APPENDIX A. FIGURES



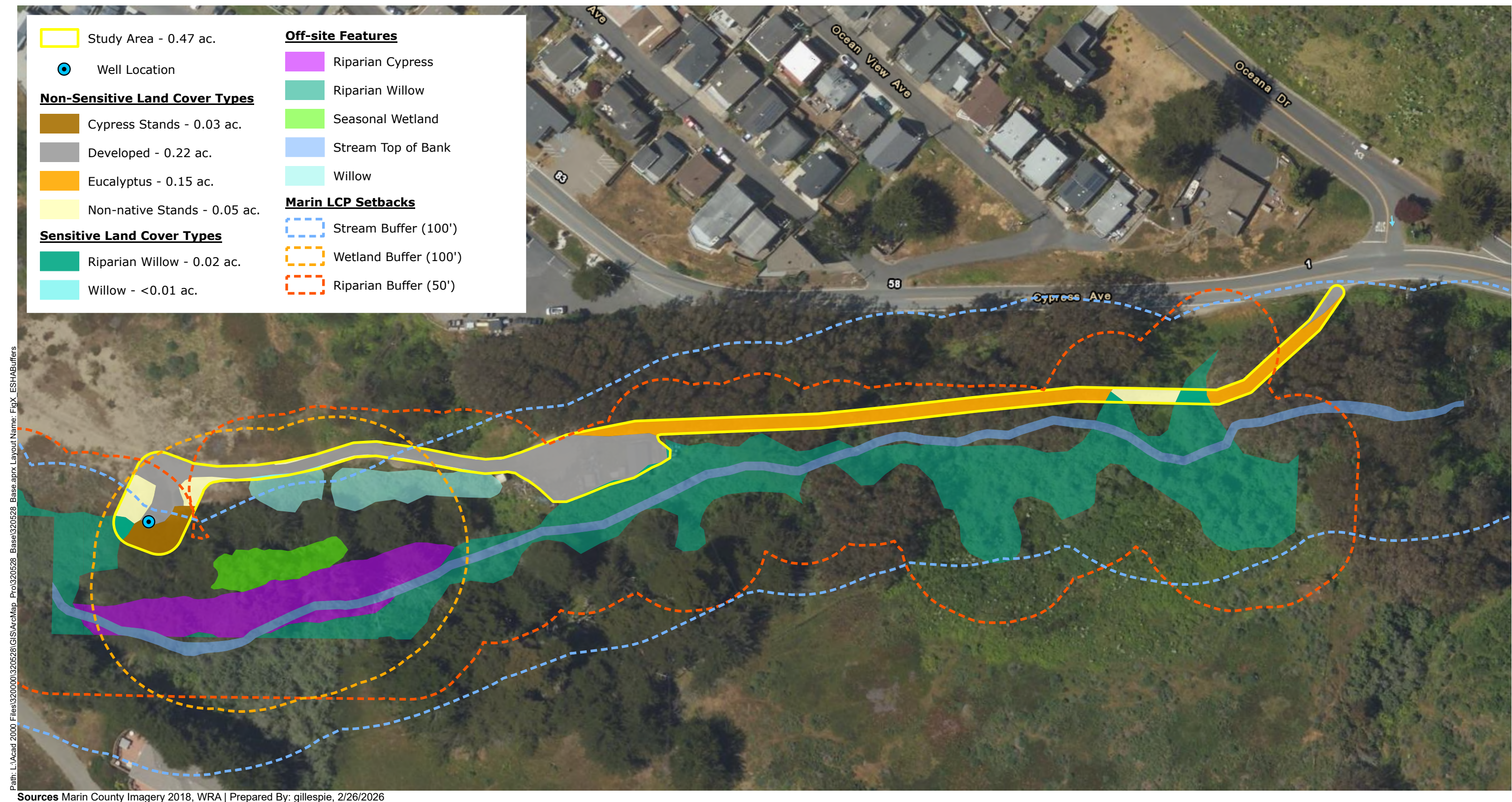


Figure 1. Land Cover Types in the Study Area: Standard LCP ESHA Buffers

Dillon Beach - Cal Water Well
Marin County, California

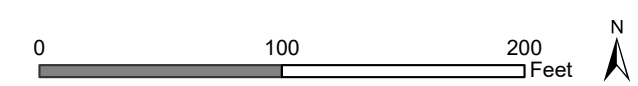
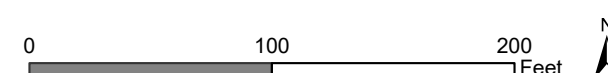




Figure 2. Land Cover Types in the Study Area: Reduced LCP ESHA Buffers

Dillon Beach - Cal Water Well
Marin County, California



APPENDIX B. 2019 OBSERVED SPECIES LIST



Appendix B. Plant and wildlife species observed by WRA biologists during the October 23, 2019 site visit.

SCIENTIFIC NAME	COMMON NAME
Plants	
<i>Abronia latifolia</i>	yellow sand verbenas
<i>Amaryllis belladonna</i>	naked lady
<i>Ammophila arenaria</i>	European beachgrass
<i>Baccharis pilularis</i>	coyote brush
<i>Brassica nigra</i>	black mustard
<i>Briza maxima</i>	rattlesnake grass
<i>Carduus pycnocephalus ssp. pycnocephalus</i>	Italian thistle
<i>Carpobrotus edulis</i>	iceplant
<i>Conium maculatum</i>	poison hemlock
<i>Cortaderia selloana</i>	pampas grass
<i>Crassula ovata</i>	jade plant
<i>Cynodon dactylon</i>	Bermuda grass
<i>Delairea odorata</i>	Cape ivy
<i>Distichlis spicata</i>	salt grass
<i>Equisetum arvense</i>	common horsetail
<i>Ericameria ericoides</i>	mock heather
<i>Festuca sp.</i>	Fescue
<i>Fragaria chiloensis</i>	beach strawberry
<i>Heracleum maximum</i>	common cowparsnip
<i>Hesperocyparis macrocarpa</i>	Monterey cypress
<i>Juncus balticus ssp. ater</i>	Baltic rush
<i>Juncus effusus</i>	common bog rush
<i>Lupinus arboreus</i>	coastal bush lupine
<i>Marah fabacea</i>	California man-root
<i>Myosotis latifolia</i>	Broadleaf forget-me-not
<i>Pennisetum clandestinum</i>	Kikuyu grass
<i>Poa annua</i>	annual blue grass
<i>Polypogon monspeliensis</i>	annual beard grass
<i>Polystichum californicum</i>	California sword fern
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Salix lasiolepis</i>	arroyo willow
<i>Schoenoplectus acutus var. occidentalis</i>	tule
<i>Senecio vulgaris</i>	common groundsel
<i>Vinca major</i>	periwinkle
<i>Washingtonia filifera</i>	California fan palm
Wildlife	
Birds	
<i>Aphelocoma californica</i>	California scrub-jay
<i>Callipepla californica</i>	California quail
<i>Calypte anna</i>	Anna's hummingbird
<i>Corvus corax</i>	common raven
<i>Euphagus cyanocephalus</i>	Brewer's blackbird

SCIENTIFIC NAME	COMMON NAME
<i>Haemorhous mexicanus</i>	house finch
<i>Larus californicus</i>	California gull
<i>Larus occidentalis</i>	western gull
<i>Melospiza crissalis</i>	California towhee
<i>Passer domesticus</i>	house sparrow [non-native]
<i>Regulus calendula</i>	ruby-crowned kinglet
<i>Sayornis nigricans</i>	black phoebe
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Zonotrichia leucophrys</i>	white-crowned sparrow
Fishes	
<i>Gasterosteus aculeatus</i>	three-spined stickleback

APPENDIX C. SPECIAL-STATUS SPECIES POTENTIALS TABLE



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
PLANTS			
pink sand-verbena <i>Abronia umbellata</i> var. <i>breviflora</i>	Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. The nearest documented occurrence of this species is approximately 1.3 miles southwest of the Study Area in Point Reyes National Park (CDFW 2023a). This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
Blasdale's bent grass <i>Agrostis blasdalei</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms May-Jul.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits. The nearest documented occurrence is approximately 1 mile east of the Study Area (CDFW 2023a).
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B.2	Cismontane woodland, valley, and foothill grassland. Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr)May-Jun.	No Potential. The Study Area lacks suitable woodland and grassland habitat in addition to volcanic or serpentine substrates known to support this species.
Sonoma Alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE, Rank 1B.1	Marshes and swamps (freshwater), riparian scrub. Elevation ranges from 15 to 1200 feet (5 to 365 meters). Blooms May-Jul.	No Potential. The Study Area does not contain suitable wetland habitat.
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	Rank 1B.2	Broadleaved upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	No Potential. The Study Area does not contain broad-leafed upland forest, chaparral, or cismontane woodland habitats.
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley, and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	No Potential. The Study Area lacks suitable coastal bluff scrub, cismontane woodland, and valley and foothill grassland.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
coast rockcress <i>Arabis blepharophylla</i>	Rank 4.3	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 5 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	No Potential. The Study Area lacks suitable coastal bluff scrub.
Marin manzanita <i>Arctostaphylos virgata</i>	Rank 1B.2	Broadleaved upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest. Elevation ranges from 195 to 2295 feet (60 to 700 meters). Blooms Jan-Mar.	Unlikely. The Study Area contains potentially suitable closed-cone coniferous forest. This species is only known to occur on sandstone or granitic soils (CDFW 2023a). Sandstone substrate occurs within a small portion of the Study Area; however, this area is heavily trafficked and below the known elevation range for this species.
coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes, and swamps (coastal salt, streamsides). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms (Apr)Jun-Oct.	Unlikely. Suitable coastal scrub, and streamside habitat is not present in the Study Area.
Sonoma sunshine <i>Blennosperma bakeri</i>	FE, SE, Rank 1B.1	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 30 to 360 feet (10 to 110 meters). Blooms Mar-May.	No Potential. The Study Area lacks valley and foothill grassland and vernal pools.
Point Reyes blennosperma <i>Blennosperma nanum</i> var. <i>robustum</i>	SR, Rank 1B.2	Coastal prairie, coastal scrub. Elevation ranges from 30 to 475 feet (10 to 145 meters). Blooms Feb-Apr.	No Potential. Suitable coastal scrub habitat is not present in the Study Area.
Bolander's reed grass <i>Calamagrostis bolanderi</i>	Rank 4.2	Bogs and fens, broadleaved upland forest, closed-cone coniferous forest, coastal scrub, meadows, and seeps (mesic), marshes and swamps (freshwater), north coast coniferous forest. Elevation ranges from 0 to 1495 feet (0 to 455 meters). Blooms May-Aug.	No Potential. Suitable coastal scrub habitat is not present in the Study Area.
Thurber's reed grass <i>Calamagrostis crassiglumis</i>	Rank 2B.1	Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 195 feet (10 to 60 meters). Blooms May-Aug.	No Potential. Suitable coastal scrub habitat is not present in the Study Area.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Oakland star-tulip <i>Calochortus umbellatus</i>	Rank 4.2	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley, and foothill grassland. Elevation ranges from 325 to 2295 feet (100 to 700 meters). Blooms Mar-May.	No Potential. The Study Area lacks potentially suitable habitat associated with this species.
coastal bluff morning-glory <i>Calystegia purpurata</i> ssp. <i>saxicola</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, north coast coniferous forest. Elevation ranges from 0 to 345 feet (0 to 105 meters). Blooms (Mar)Apr-Sep.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits. The nearest documented occurrence is from 1998 and approximately 0.35 miles north of the Study Area (CDFW 2023a).
swamp harebell <i>Campanula californica</i>	Rank 1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes, and swamps (freshwater), north coast coniferous forest. Elevation ranges from 0 to 1330 feet (1 to 405 meters). Blooms Jun-Oct.	No Potential. The Study Area does not contain suitable wetland habitat that could support this species.
Buxbaum's sedge <i>Carex buxbaumii</i>	Rank 4.2	Bogs and fens, meadows, and seeps (mesic), marshes and swamps. Elevation ranges from 5 to 10825 feet (3 to 3300 meters). Blooms Mar-Aug.	No Potential. The Study Area does not contain suitable wetland habitat that could support this species.
bristly sedge <i>Carex comosa</i>	Rank 2B.1	Coastal prairie, marshes, and swamps (lake margins), valley and foothill grassland. Elevation ranges from 0 to 2050 feet (0 to 625 meters). Blooms May-Sep.	No Potential. The Study Area does not contain suitable wetland habitat that could support this species.
bristle-stalked sedge <i>Carex leptalea</i>	Rank 2B.2	Bogs and fens, meadows, and seeps (mesic), marshes and swamps. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	No Potential. The Study Area does not contain suitable wetland habitat that could support this species.
Lyngbye's sedge <i>Carex lyngbyei</i>	Rank 2B.2	Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug.	No Potential. The Study Area does not contain suitable habitat for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	Unlikely. The Study Area does not contain suitable habitat for this species.
Humboldt Bay owl's-clover <i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Apr-Aug.	No Potential. The Study Area does not contain suitable habitat for this species.
Point Reyes paintbrush <i>Castilleja leschkeana</i>	Rank 1A	Marshes and swamps (coastal). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun.	No Potential. The Study Area does not contain suitable habitat for this species.
glory brush <i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	Rank 4.3	Chaparral. Elevation ranges from 95 to 2000 feet (30 to 610 meters). Blooms Mar-Jun (Aug).	No Potential. The Study Area lacks chaparral habitat.
Point Reyes ceanothus <i>Ceanothus gloriosus</i> var. <i>gloriosus</i>	Rank 4.3	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May.	Unlikely. Despite potentially suitable closed-cone coniferous forest and coastal scrub habitat, this species is only known from Point Reyes Peninsula (CDFW 2023a, Howell et al. 2007).
Mt. Vision ceanothus <i>Ceanothus gloriosus</i> var. <i>porrectus</i>	Rank 1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley, and foothill grassland. Elevation ranges from 80 to 1000 feet (25 to 305 meters). Blooms Feb-May.	Unlikely. Despite potentially suitable closed-cone coniferous forest, this species is only known from Point Reyes Peninsula (CDFW 2023a, Howell et al. 2007).
Mason's ceanothus <i>Ceanothus masonii</i>	SR, Rank 1B.2	Chaparral (openings, rocky, serpentine). Elevation ranges from 750 to 1640 feet (230 to 500 meters). Blooms Mar-Apr.	No Potential. The Study Area lacks chaparral habitat and serpentine substrates most often associated with this species.
Point Reyes bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	No Potential. The Study Area lacks coastal salt marsh habitat.
San Francisco Bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 5 to 705 feet (3 to 215 meters). Blooms Apr-Jul (Aug).	Present. Suitable coastal dune habitat is present near the Study Area. This species was observed along the northern edge of the footpath in 2022.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
woolly-headed spineflower <i>Chorizanthe cuspidata</i> var. <i>villosa</i>	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 5 to 195 feet (3 to 60 meters). Blooms May-Jul (Aug).	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	FE, Rank 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Sep.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
Sonoma spineflower <i>Chorizanthe valida</i>	FE, SE, Rank 1B.1	Coastal prairie (sandy). Elevation ranges from 30 to 1000 feet (10 to 305 meters). Blooms Jun-Aug.	No Potential. The Study Area lacks coastal prairie habitat associated with this species.
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	Rank 2B.1	Marshes and swamps coastal, fresh, or brackish water. Elevation ranges from 0 to 655 feet (0 to 200 meters). Blooms Jul-Sep.	No Potential. The Study Area does not contain suitable habitat for this species.
Franciscan thistle <i>Cirsium andrewsii</i>	Rank 1B.2	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	No Potential. The Study Area does not contain suitable habitat for this species.
Raiche's red ribbons <i>Clarkia concinna</i> ssp. <i>raichei</i>	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-May.	No Potential. The Study Area does not contain suitable habitat for this species.
Mendocino dodder <i>Cuscuta pacifica</i> var. <i>papillata</i>	Rank 1B.2	Coastal dunes (interdune depressions). Elevation ranges from 0 to 165 feet (0 to 50 meters). Blooms (Jun)Jul-Oct.	No Potential. The Study Area does not contain suitable habitat for this species.
Baker's larkspur <i>Delphinium bakeri</i>	FE, SE, Rank 1B.1	Broadleaved upland forest, coastal scrub, valley, and foothill grassland. Elevation ranges from 260 to 1000 feet (80 to 305 meters). Blooms Mar-May.	No Potential. The Study Area does not contain suitable habitat for this species.
golden larkspur <i>Delphinium luteum</i>	FE, SR, Rank 1B.1	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Mar-May.	No Potential. The Study Area does not contain suitable habitat for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar (Apr).	Unlikely. The Study Area contains potentially suitable closed-cone coniferous forest and riparian habitat. The nearest and most recent documented occurrence is approximately 7.5 miles north of the Study Area (CDFW 2023a). The vegetative form of this species was not observed during any site visits or the rare plant survey.
small spikerush <i>Eleocharis parvula</i>	Rank 4.3	Marshes and swamps. Elevation ranges from 0 to 9910 feet (1 to 3020 meters). Blooms (Apr)Jun-Aug (Sep).	No Potential. The Study Area lacks coastal salt marsh habitat associated with this species.
California bottle-brush grass <i>Elymus californicus</i>	Rank 4.3	Broadleaved upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms May-Aug (Nov).	No Potential. The Study Area does not contain suitable habitat for this species.
supple daisy <i>Erigeron supplex</i>	Rank 1B.2	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 165 feet (10 to 50 meters). Blooms May-Jul.	No Potential. The Study Area does not contain suitable habitat for this species.
bluff wallflower <i>Erysimum concinnum</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 605 feet (0 to 185 meters). Blooms Feb-Jul.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
Marin checker lily <i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 45 to 490 feet (15 to 150 meters). Blooms Feb-May.	No Potential. The Study Area does not contain suitable habitat for this species.
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley, and foothill grassland. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	Unlikely. Study Area lacks serpentine and clay substrates often associated with this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
blue coast gilia <i>Gilia capitata</i> ssp. <i>chamissonis</i>	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
woolly-headed gilia <i>Gilia capitata</i> ssp. <i>tomentosa</i>	Rank 1B.1	Coastal bluff scrub, valley, and foothill grassland. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul.	No Potential. The Study Area does not contain suitable habitat for this species.
dark-eyed gilia <i>Gilia millefoliata</i>	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.
San Francisco gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i>	Rank 3.2	Coastal bluff scrub, coastal scrub, valley, and foothill grassland. Elevation ranges from 45 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	No Potential. The Study Area does not contain suitable habitat for this species.
congested-headed hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	No Potential. The Study Area does not contain suitable habitat for this species.
short-leaved evax <i>Hesperivax sparsiflora</i> var. <i>brevifolia</i>	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 705 feet (0 to 215 meters). Blooms Mar-Jun.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits. The nearest documented occurrence is of unknown status located approximately 500 feet west of the Study Area (CDFW 2023a).
water star-grass <i>Heteranthera dubia</i>	Rank 2B.2	Marshes and swamps (alkaline, still, or slow-moving water). Elevation ranges from 95 to 4905 feet (30 to 1495 meters). Blooms Jul-Oct.	No Potential. The Study Area does not contain suitable habitat for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Kellogg's horkelia <i>Horkelia cuneata</i> var. <i>sericea</i>	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 30 to 655 feet (10 to 200 meters). Blooms Apr-Sep.	Unlikely. Although the Study Area contains potentially suitable closed-cone coniferous forest and coastal dune occurs adjacent, the site lacks old dunes and coastal sandhills most often associated with this species.
Point Reyes horkelia <i>Horkelia marinensis</i>	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 15 to 2475 feet (5 to 755 meters). Blooms May-Sep.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits. The nearest documented occurrence is of known location is approximately 2.2 miles north of the Study Area from 1986 (CDFW 2023a).
harlequin lotus <i>Hosackia gracilis</i>	Rank 4.2	Broadleaved upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley, and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest that could support this species. This species was not observed during the 2022 rare plant survey.
coast iris <i>Iris longipetala</i>	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows, and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	No Potential. The Study Area does not contain suitable habitat and heavy soils associated with this species.
Baker's goldfields <i>Lasthenia californica</i> ssp. <i>bakeri</i>	Rank 1B.2	Closed-cone coniferous forest (openings), coastal scrub, meadows and seeps, marshes, and swamps. Elevation ranges from 195 to 1705 feet (60 to 520 meters). Blooms Apr-Oct.	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest which could support this species. This species is closely associated with openings in immediate coastal headlands. This species was not observed during the 2022 rare plant survey.
perennial goldfields <i>Lasthenia californica</i> ssp. <i>macrantha</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Jan-Nov.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	No Potential. The Study Area lacks suitable habitat associated with this species.
beach layia <i>Layia carnosa</i>	FE, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Mar-Jul.	Unlikely. This species is only known from Point Reyes Peninsula in Marin County. The nearest documented occurrence is from 2002 and approximately 7 miles south of the Study Area (CDFW 2023b).
large-flowered leptosiphon <i>Leptosiphon grandiflorus</i>	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley, and foothill grassland. Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug.	Unlikely. Although the Study Area contains potentially suitable closed-cone coniferous forest, this species is most often associated with open, grassy flats with sandy substrates.
rose leptosiphon <i>Leptosiphon rosaceus</i>	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	No Potential. The Study Area lacks suitable habitat associated with this species.
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3	Broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley, and foothill grassland. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	No Potential. The Study Area does not contain suitable habitat for this species.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov.	No Potential. The Study Area lacks coastal salt marsh and riparian scrub. In addition, the Study Area lacks muddy or silty substrates associated with river deposition or river bank erosion.
coast lily <i>Lilium maritimum</i>	Rank 1B.1	Broadleaved upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes, and swamps (freshwater), north coast coniferous forest. Elevation ranges from 15 to 1560 feet (5 to 475 meters). Blooms May-Aug.	Unlikely. Despite potentially suitable closed-cone coniferous forest, the Study Area lacks raised hummocks within bogs and mesic grasslands most often associated with this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Pitkin Marsh lily <i>Lilium pardalinum</i> ssp. <i>pitkinense</i>	FE, SE, Rank 1B.1	Cismontane woodland, meadows and seeps, marshes, and swamps (freshwater). Elevation ranges from 110 to 215 feet (35 to 65 meters). Blooms Jun-Jul.	No Potential. The Study Area lacks marsh habitat with soils composed of uplifted marine sand associated with this species. This species is only known from two marshes in Sonoma County, near Sebastopol (CNPS 2023a).
Point Reyes meadowfoam <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	SE, Rank 1B.2	Coastal prairie, meadows, and seeps (mesic), marshes and swamps (freshwater), vernal pools. Elevation ranges from 0 to 460 feet (0 to 140 meters). Blooms Mar-May.	No Potential. The Study Area does not contain suitable habitat for this species.
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	FE, SE, Rank 1B.1	Meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Apr-May.	No Potential. The Study Area lacks suitable habitat associated with this species.
San Mateo tree lupine <i>Lupinus arboreus</i> var. <i>eximius</i>	Rank 3.2	Chaparral, coastal scrub. Elevation ranges from 295 to 1805 feet (90 to 550 meters). Blooms Apr-Jul.	No Potential. The Study Area does not contain suitable habitat for this species..
Tidestrom's lupine <i>Lupinus tidestromii</i>	FE, SE, Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jun.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits. The nearest documented occurrence of known location is 1.25 miles south of the Study Area from 1996 (CDFW 2023a).
marsh microseris <i>Microseris paludosa</i>	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley, and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun (Jul).	Moderate Potential. The Study Area contains potentially suitable closed-cone coniferous forest. The nearest documented occurrence is 0.20 miles north of the Study Area (CDFW 2023a). This species was not observed during the 2022 rare plant survey.
northern curly-leaved monardella <i>Monardella sinuata</i> ssp. <i>nigrescens</i>	Rank 1B.2	Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills). Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms (Apr)May-Jul (Aug-Sep).	Unlikely. This species is only known from Point Reyes Peninsula in Marin County. The nearest documented occurrence is approximately 7 miles south of the Study Area (CDFW 2023b).



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Gairdner's yampah <i>Perideridia gairdneri</i> <i>ssp. gairdneri</i>	Rank 4.2	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct.	No Potential. The Study Area lacks suitable habitat associated with this species.
North Coast phacelia <i>Phacelia insularis</i> var. <i>continentis</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 30 to 560 feet (10 to 170 meters). Blooms Mar-May.	Unlikely. This species is only known from Point Reyes Peninsula in Marin County on maritime bluffs.
Point Reyes rein orchid <i>Piperia elegans</i> ssp. <i>decurtata</i>	Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 45 to 605 feet (15 to 185 meters). Blooms Jul-Oct.	No Potential. The Study Area lacks suitable habitat associated with this species.
Michael's rein orchid <i>Piperia michaelii</i>	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	No Potential. The Study Area does not contain suitable habitat for this species.
Oregon polemonium <i>Polemonium carneum</i>	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6005 feet (0 to 1830 meters). Blooms Apr-Sep.	No Potential. The Study Area does not contain suitable habitat for this species.
Marin knotweed <i>Polygonum marinense</i>	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug (Oct).	No Potential. The Study Area lacks coastal salt marsh and brackish marsh habitat associated with this species.
Cunningham Marsh cinquefoil <i>Potentilla uliginosa</i>	Rank 1A	Marshes and swamps. Elevation ranges from 95 to 130 feet (30 to 40 meters). Blooms May-Aug.	No Potential. The Study Area lacks permanent, oligotrophic, wetlands associated with this species.
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	No Potential. The Study Area lacks suitable habitat associated with this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
California beaked-rush <i>Rhynchospora californica</i>	Rank 1B.1	Bogs and fens, lower montane coniferous forest, meadows, and seeps (seeps), marshes and swamps (freshwater). Elevation ranges from 145 to 3315 feet (45 to 1010 meters). Blooms May-Jul.	No Potential. The Study Area does not contain suitable habitat for this species.
round-headed beaked-rush <i>Rhynchospora globularis</i>	Rank 2B.1	Marshes and swamps (freshwater). Elevation ranges from 145 to 195 feet (45 to 60 meters). Blooms Jul-Aug.	No Potential. The Study Area does not contain suitable habitat for this species.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct (Nov).	No Potential. The Study Area does not contain suitable habitat for this species.
Point Reyes checkerbloom <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Rank 1B.2	Marshes and swamps (freshwater, near coast). Elevation ranges from 5 to 245 feet (3 to 75 meters). Blooms Apr-Sep.	No Potential. The Study Area does not contain suitable habitat for this species.
Marin checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun.	No Potential. The Study Area lacks chaparral habitat and serpentine or volcanic substrates associated with this species.
purple-stemmed checkerbloom <i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	Rank 1B.2	Broadleaved upland forest, coastal prairie. Elevation ranges from 45 to 280 feet (15 to 85 meters). Blooms May-Jun.	No Potential. The Study Area lacks suitable habitat associated with this species.
Scouler's catchfly <i>Silene scouleri</i> ssp. <i>scouleri</i>	Rank 2B.2	Coastal bluff scrub, coastal prairie, valley, and foothill grassland. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms (Mar-May) Jun-Aug (Sep).	No Potential. The Study Area lacks suitable habitat associated with this species.
Santa Cruz microseris <i>Stebbinsoseris decipiens</i>	Rank 1B.2	Broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley, and foothill grassland. Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May.	No Potential. The Study Area does not contain suitable habitat for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
beach starwort <i>Stellaria littoralis</i>	Rank 4.2	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes, and swamps. Elevation ranges from 15 to 130 feet (5 to 40 meters). Blooms Mar, May, Jun, Jul.	Unlikely. Suitable coastal dune habitat is present adjacent to the Study Area. This species was not observed during the 2022 LSA rare plant survey nor during 2019 and 2021 WRA site visits
Mt. Tamalpais bristly jewelflower <i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>	Rank 1B.2	Chaparral, valley, and foothill grassland. Elevation ranges from 490 to 2625 feet (150 to 800 meters). Blooms May-Jul (Aug).	No Potential. The Study Area lacks chaparral and valley and foothill grassland habitat on serpentine substrates.
two-fork clover <i>Trifolium amoenum</i>	FE, Rank 1B.1	Coastal bluff scrub, valley, and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	No Potential. The Study Area lacks potentially suitable habitat associated with this species.
Santa Cruz clover <i>Trifolium buckwestiorum</i>	Rank 1B.1	Broadleaved upland forest, cismontane woodland, coastal prairie. Elevation ranges from 340 to 2000 feet (105 to 610 meters). Blooms Apr-Oct.	No Potential. The Study Area lacks potentially suitable habitat associated with this species.
Pacific Grove clover <i>Trifolium polyodon</i>	SR, Rank 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley, and foothill grassland. Elevation ranges from 15 to 1395 feet (5 to 425 meters). Blooms Apr-Jun (Jul).	Unlikely. Despite potentially suitable closed-cone coniferous forest, this species is only known from Point Reyes Peninsula in Marin County. The nearest documented occurrence is approximately 15 miles south of the Study Area (CDFW 2023b).
San Francisco owl's-clover <i>Triphysaria floribunda</i>	Rank 1B.2	Coastal prairie, coastal scrub, valley, and foothill grassland. Elevation ranges from 30 to 525 feet (10 to 160 meters). Blooms Apr-Jun.	No Potential. The Study Area does not contain suitable habitat for this species.
coastal triquetrella <i>Triquetrella californica</i>	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 30 to 330 feet (10 to 100 meters).	No Potential. The Study Area does not contain suitable habitat for this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
WILDLIFE			
pallid bat <i>Antrozous pallidus</i>	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Unlikely. Existing small structures (well sheds) within the Study Area lack thermal characteristics typically favored by roosting bats; no caves, large tree hollows, or similar substrates present.
Point Reyes mountain beaver <i>Aplodontia rufa phaea</i>	SSC	Occurs only in western Marin County, almost entirely within Point Reyes National Seashore. Found on moist, north-facing slopes within areas of coastal scrub. Lives in burrow systems and forages on a variety of herbaceous plants.	No Potential. The Study Area provides only marginal habitat, and is outside of this species' local range.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, WBWG High	Associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves, and mines; males roost singly or in small groups. Foraging typically occurs in open forests. Very sensitive to human disturbance.	Unlikely. The existing barn is open to the external environment and lacks the thermal characteristics typically favored by roosting bats; no caves or similar substrates present.
silver-haired bat <i>Lasionycteris noctivagans</i>	WBWG Medium	Summer habitats include coniferous forests and various types of woodland, including riparian. This species is primarily a forest dweller, feeding over streams, ponds, and open brushy areas. It roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark.	Unlikely. The Study Area is effectively unforested and provides no typical habitat.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
western red bat <i>Lasiurus blossevillii</i>	SSC, WBWG High	This species is typically solitary, roosting primarily in the foliage of trees or shrubs; broad-leaved deciduous trees are favored. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Unlikely. The Study Area does not contain broad-leaved trees of the type typically used for roosting.
fringed myotis <i>Myotis thysanodes</i>	WBWG High	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwoods/sequoia groves. Buildings, mines, and large snags are important day and night roosts.	Unlikely. The Study Area is unforested, with limited tree cover.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents. Somewhat tolerant of human activities.	Unlikely. Though badgers are known from open agricultural and preserved lands in the vicinity, the Study Area does not contain grassland and upper vegetated dune areas are regularly disturbed by recreational activities.
Point Reyes jumping mouse <i>Zapus trinotatus orarius</i>	SSC	Restricted to Point Reyes Peninsula in western Marin County. Occurs in wet, marshy coastal meadows and humus-filled dark soils of coast redwood forests, also thickets of woody vegetation along streams and seeps. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	No Potential. The Study Area is outside of this species' range, and provides no typical habitat.
tricolored blackbird <i>Agelaius tricolor</i>	SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near stagnant freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	Unlikely. The Study Area lacks emergent marsh, vegetated ponds, or other typical nesting habitats. May occasionally occur with other blackbird species during the non-breeding season.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
grasshopper sparrow <i>Ammodramus</i> <i>savannarum</i>	SSC	Summer resident. Secretive; breeds in open grassland habitats, generally with low- to moderate-height grasses and scattered shrubs.	Unlikely. The Study Area lacks expansive grassland and provides no typical nesting habitat.
golden eagle <i>Aquila chrysaetos</i>	BGEPA, CFP	Year-round resident in rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas. Forages over wide areas. As per Shuford (1993), golden eagle is a rare, local breeder in Marin County with a small population (4 to 5 pairs).	Unlikely. The Study Area and its immediate (maritime) environs do not provide any typical habitat. The nearest general area of documented nesting is located a minimum of 2.0 miles to the south (Shuford 1993). May occasionally soar over or forage near the Study Area.
short-eared owl <i>Asio flammeus</i>	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	Unlikely. Though Study Area lacks open grassland, marsh, or other typical habitats; breeding within Marin County is very rare and as known restricted to Point Reyes (Shuford and Gardali 2008).
long-eared owl <i>Asio otus</i>	SSC	Resident in open woodlands, forest edges, riparian strips along rivers, and wooded ravines and gullies. Breeding habitat includes thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	Unlikely. On-site tree stands provide some suitable habitat elements, but considered a rare breeder in Marin County, with known nesting activities limited to Point Reyes (Shuford 1993).
burrowing owl <i>Athene cunicularia</i>	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	Unlikely. Recent nesting in Marin County is very limited and known only from its eastern portion (Shuford 1993); wintering birds have been recently observed at Point Reyes and in open grassland/pastureland areas within 2.5 miles of the Study Area (eBird 2019). The Study Area lacks grassland or relatively open areas with soil characteristics suitable for burrowing.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
marbled murrelet <i>Brachyramphus marmoratus</i>	FT, SE	Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes.	No Potential. The Study Area lacks old-growth forest; although designated critical habitat is present in Marin County, breeding within the County has never been documented (Shuford 1993, CDFW 2023). May rarely occur on marine inshore waters nearby.
Vaux's swift <i>Chaetura vauxi</i>	SSC	Summer resident, breeding primarily in forested areas. Nests in tree cavities, favoring those with a large vertical extent; also uses chimneys and other man-made substrates. Forages aerially for insects.	Unlikely. Tree stands within the Study Area do not provide the large, vertical hollows/cavities typically used by this species for nesting in the vicinity.
western snowy plover <i>Charadrius nivosus nivosus</i>	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly, or friable soils for nesting.	Unlikely. Suitable habitat is not present within the Study Area.
northern harrier <i>Circus cyaneus</i>	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	Unlikely. The Study Area does not contain open grassland or wetland areas. May pass through during the non-breeding period and migration.
olive-sided flycatcher <i>Contopus cooperi</i>	SSC	Summer resident. Breeds in montane coniferous forests, as well as mixed forests along the coast. Often associated with edge habitats.	Unlikely. Tree groves within the Study Area are subject maritime influence, and do not provide typical nesting habitat.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
black swift <i>Cypseloides niger</i>	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas.	No Potential. The Study Area does not contain any suitable nesting habitat; occurrence would be limited to rare use of airspace.
white-tailed kite <i>Elanus leucurus</i>	CFP	Year-round resident of coastal and valley lowlands. Commonly found in savanna, open woodlands, marshes, grasslands, partially cleared lands, and cultivated fields. Nests in a variety of trees. Preys on small diurnal mammals and other small vertebrates.	Moderate Potential. The Study Area provides some open areas for foraging and suitable nest trees; this species has been observed in and adjacent to the Dillon Beach community (eBird 2019).
American peregrine falcon <i>Falco peregrinus anatum</i>	SE, CFP	Largely year-round resident. Requires protected cliffs, ledges or manmade structures for nesting. Often associated with coasts, bays, marshes and other open expanses of water. Preys primarily upon waterbirds; forages widely.	Unlikely. Although peregrine falcons are known from the Marin County coast, the Study Area provides only incidental habitat.
tufted puffin <i>Fratercula cirrhata</i>	SSC	Pelagic and coastal marine. Nests near or along the coast on islands, islets, and (rarely) isolated mainland cliffs. Requires sod or earth into which the birds can burrow, or rocky crevices where friable soil is absent. Forages at sea, primarily for fish.	No Potential. The Study Area lacks marine habitat and islands or isolated/undisturbed mainland cliffs for nesting.
saltmarsh (San Francisco) common yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC	Year-round resident of the San Francisco Bay region in marshes, ranging from salt to fresh. Requires thick, continuous cover down to water surface for foraging, and tall emergent and/or herbaceous vegetation for nesting.	Unlikely. The Study Area does not provide suitably extensive and dense wetland/emergent vegetation.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
bald eagle <i>Haliaeetus leucocephalus</i>	BGEPA, SE, CFP	Occurs year-round in California, though primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	Unlikely. Marin County's small breeding population is known to utilize Inverness Ridge and interior, forested reservoirs. May occasionally forage over/along the ocean near the Study Area, primarily during the non-breeding period.
yellow-breasted chat <i>Icteria virens</i>	SSC	Summer resident, utilizing riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape.	Unlikely. The Study Area does not provide riparian vegetation of the type and density favored by this species, and its Marin County breeding distribution is limited (Shuford 1993).
loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Year-round resident in open areas with scattered shrubs, trees, posts, etc. from which to forage for large insects and small vertebrates. Nest well concealed above ground in densely foliated shrub or tree.	Unlikely. This species' local range includes the vicinity of Tomales (Shuford 1993, eBird 2019), but the Study Area lacks grassland pastures, open woodland, or other typical (non-maritime) habitats.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP	Extremely secretive resident of emergent marshes in the San Francisco Bay Estuary and portions of the Central Valley and adjacent foothills.. Occurs in salt, brackish and freshwater habitats. Nests in dense stands of emergent vegetation.	No Potential. The Study Area does not contain emergent marsh/wetland, and is outside of this species' local range.
ashy storm-petrel <i>Oceanodroma homochroa</i>	SSC	Marine species; nests in rocky crevices on offshore islands and rocks from southern Mendocino County to northern Baja California. Forages over open ocean for invertebrates and larval fishes.	No Potential. The Study Area provides no marine waters or islands/sea stacks for nesting.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals.	Unlikely (nesting). The Study Area does not contain open grassland or suitable tidal-adjacent vegetation to support nesting by this species. Savannah sparrows (including individuals of other [non-status] subspecies) may occur during the non-breeding season in open scrub and similar habitats.
purple martin <i>Progne subis</i>	SSC	Summer resident, usually breeding in woodlands and low-elevation coniferous and mixed forests. Nests in tree and snag cavities; also uses man-made structures (e.g., utility poles). Nest is often located in tall, isolated tree or snag	Unlikely. The Study Area lacks coniferous forest, and the conifers present (cypresses) lack elevated cavities typically used by this species.
California Ridgway's (clapper) rail <i>Rallus obsoletus obsoletus</i>	FE, SE, CFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on molluscs and crustaceans.	No Potential. The Study Area does not contain emergent tidal marsh/wetland, and is outside of this species' local range.
(Brewster's) yellow warbler <i>Setophaga petechial</i>	SSC	Summer resident, nesting in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in suitable montane shrubbery. Occurs widely during migration.	Moderate Potential. Willow stands along Dillon Creek and immediately adjacent to the Study Area provide suitable nesting habitat.
northern spotted owl <i>Strix occidentalis caurina</i>	FT, ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with old-growth or otherwise mature conifers. In Marin County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	No Potential. The Study Area does not contain dense coniferous or mixed forest.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
Pacific pond turtle <i>Actinemys marmorata</i>	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	No Potential. Suitable habitat for this species is not present within the Study Area.
California tiger salamander <i>Ambystoma californiense</i>	FE/FT, ST, SSC	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Primarily inhabits grasslands and oak woodland. Adults are fossorial and utilize mammal burrows and other subterranean refugia most of the year. Breeding occurs primarily in vernal pools and other seasonal water features.	No Potential. The Study Area does not provide any breeding habitat or any typical terrestrial habitat, and his outside of this species known range.
California giant salamander <i>Dicamptodon ensatus</i>	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	No Potential. Suitable habitat for this species is not present within the Study Area.
foothill yellow-legged frog <i>Rana boylei</i>	SC, SSC	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	Unlikely. Suitable habitat is not present within the Study Area..
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	Unlikely Breeding Habitat. Moderate Dispersal Potential. This species is known from the vicinity of the Study Area, with three CNDDB occurrences within 1 mile; the nearest of these is located < 0.1 mile to the south (CDFW 2023). Breeding within the Study Area is unlikely. However, individuals may disperse/move through portions of the Study Area, particularly during the rainy season.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Restricted to waters with low to moderate salinities in California's coastal wetland habitats. Habitat is characterized by brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant.	Unlikely. Suitable lagoon-like features are absent, and the on-site stream lacks suitable hydrology for this species. The nearest documented occurrence is located greater than 1 mile to the north, in the Estero de San Antonio (CDFW 2023).
Tomales roach <i>Lavinia symmetricus</i> ssp. 2	SSC	From Walker Creek and other tributaries to Tomales Bay. This species is generally found in small, warm intermittent streams. Dense populations are frequently found in isolated pools.	No Potential. The Study Area's is not within the Tomales Bay watershed.
coho salmon, central California coast ESU <i>Oncorhynchus kisutch</i>	FE, SE, NMFS	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	No Potential. The Study Area does not contain anadromous streams of the type suitable for spawning and migration by this species.
steelhead - central California coast DPS <i>Oncorhynchus mykiss</i>	FT, NMFS	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	No Potential. The Study Area does not contain anadromous streams of the type suitable for spawning and migration by this species.
longfin smelt <i>Spirinchus thaleichthys</i>	ST, SSC, FC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt but can be found in completely freshwater to almost pure seawater.	No Potential. The Study Area does not contain anadromous streams of the type suitable for spawning and migration by this species.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
western bumble bee <i>Bombus occidentalis</i>	SC	Formerly common; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g., mammal burrows). Many plant species are visited and pollinated.	Unlikely. As per the Xerces Society (2018), there are no known extant populations of this species in the San Francisco Bay area.
monarch butterfly <i>Danaus plexippus</i>	none; (winter roosts protected by CDFW and CCC)	Winter roost sites extend along the coast from northern Mendocino County to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	Moderate Potential. On-site stands of eucalyptus and cypress provide potential roost trees.
Myrtle's silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE	Restricted to the foggy, coastal hills of the Point Reyes peninsula and environs; extirpated from coastal San Mateo County. Larval foodplant thought to be <i>Viola adunca</i> .	Unlikely. This species is known from the vicinity, with the nearest documented CNDDB occurrence located approximately 0.7 mile to the north (CDFW 2023). However, the Study Area lacks open grassland, open seeps, or similar typical habitats, and the host plant was not observed during the site visit.
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE	Inhabit lowland perennial streams in Sonoma, Marin and Napa counties. Found within stream pools, in areas away from the main current, where there are often undercut banks, exposed root systems, and vegetation hanging into the water.	No Potential. Suitable habitat is not present within the Study Area.



SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA
<p>* KEY TO STATUS CODES:</p> <p>FE: Federal Endangered FT: Federal Threatened FC: Federal Candidate BGEPA: Federal Bald and Golden Eagle Protection Act Species SE: State Endangered ST: State Threatened SR: State Rare Rank 1A: Plants presumed extinct in California Rank 1B: Plants rare, threatened, or endangered in California and elsewhere Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere Rank 3: Plants about which we need more information – a review list Rank 4: Plants of limited distribution – a watch list</p>			
<p>POTENTIAL TO OCCUR:</p> <p>No Potential: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).</p> <p>Unlikely: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.</p> <p>Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.</p> <p>High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.</p> <p>Present. Species was observed on the site or has been recorded (i.e. CNDDb, other reports) on the site recently.</p>			



APPENDIX D. REPRESENTATIVE SITE PHOTOGRAPHS





Photo 1. Existing, operational well.



Photo 2. Existing, operational access footpath.



Photo 3. Overview of Study Area. Note the existing well towards the center of the image.