Biological Resources Memorandum

Introduction

This biological resource memorandum addresses the Critical Coastal Projects located in San Clemente, Orange County, California (Figure 1, Regional Map). The Critical Coastal Projects include three areas at mile post (MP) 203.80 – 203.90 (Area #1), MP 204.00 – 204.40 (Area #2), and MP 206.00 – 206.67 (Area #4) along the railroad right-of-way (ROW) within the Orange Subdivision of the Los Angeles-San Diego-San Luis Obispo Rail Corridor (LOSSAN Corridor). Biological resources, including vegetation communities, habitat, and preliminary boundaries of potential aquatic resources were recorded within the Project study area for each of the three areas, which includes the area within a 50-foot buffer from the railroad ROW.

Background and Project Description

The coastal rail line corridor in southern Orange County is owned by Orange County Transportation Authority (OCTA) and operated by the Southern California Regional Rail Authority (SCRRA or Metrolink) and Amtrak Pacific Surfliner for passenger service and by the BNSF Railway for freight service. This segment of railroad is part of the greater 351-mile LOSSAN Corridor. The Department of Defense (DOD) has designated this key railroad line as a part of the Strategic Rail Corridor Network (STRACNET). Over the past three years, coastal rail line corridor operations have been adversely affected by the processes of coastal bluff erosion, beach loss, revetment loss, and bluff failures. Recent bluff failures at MP 204.2 Mariposa Pedestrian Bridge, MP 204.6 Casa Romantica, and reactivation of an ancient landslide at MP 206.7 Cyprus Shore have resulted in significant interruptions to railroad operations. The coastal portion of the rail line corridor where Areas 1, 2, and 4 are located are subject to future similar threats, which can further impact railroad operations. OCTA, along with its rail operators, are seeking solutions to further reinforce this critical rail corridor.

The Coastal Rail Resiliency Study Initial Assessment Technical Memorandum developed by OCTA for rail facilities in the cities of Dana Point and San Clemente identify three areas for potential reinforcement to further solidify the stability of the railroad corridor. These potential reinforcement areas are described below:

- Area #1 – MP 203.80 – MP 203.90 – Riprap Restoration
    - Place new rock and/or rework existing rock that has fallen out of section to restore the structure slope and crest elevation, thereby providing beach erosion protection and reduction in wave overtopping. Where possible, place new, larger rock and/or rework existing rock in a way that reduces the slope, thereby improving the stability of the rocks.
- Area #2 – MP 204.00 – MP 204.40 – Riprap Restoration
    - The reinforcement approach for this location is the same as described above for Area 1.
- Area #4 – MP 206.00 – MP 206.67 – Engineered Revetment

- Installation of an engineered revetment with filter fabric, bedding stone, and armor to minimize piping (movement of fine-grained sediment through voids in the rocks) and a layered-stone placement design with keyway founded on bedrock or to a toe elevation of +2 ft or lower is recommended. Dual purpose of revetment is to arrest continued landward retreat of soils into the rail corridor and minimize continued displacement of stones onto the beach following storms.

Figure 1. Regional Map

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Methods

Literature Review

A list of special-status species that have the potential to occur within the Project study area for each of the three areas, was prepared using information provided by the USFWS species list from the online Information for Planning and Conservation Environmental Conservation Online System (USFWS 2024), the CDFW's California Natural Diversity Database (CNDDB) RareFind program (CDFW 2024), National Marine Fisheries Service (NMFS 2024), and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2024). Attachment A provides the literature review results, as well as special-status species plant and wildlife tables containing assessments of each species' potential to occur and the supporting rationale.

In addition to a review of special-status species databases, aerial photographs and topographic mapping (1-foot contours) of the Project study areas at a scale of 1:2,400 were reviewed prior to and following the field surveys (USGS 2019). Sensitive vegetation communities and Environmentally Sensitive Habitat Areas were identified using the NatureServe Heritage Program Status Ranking system (Faber-Langendoen et al. 2012), and the City of San Clemente Local Coastal Program Land Use Plan (City of San Clemente 2018) respectively.

General Biological Field Surveys and Vegetation Mapping

HDR conducted vegetation mapping and habitat assessments for federally and/or state-listed plant and wildlife species within the Project study area on March 25, 2024. Vegetation was classified using A Manual of California Vegetation (Sawyer et al. 2009) or if not described by in Sawyer et al. 2009, Oberbauer (2008) was used for classification. This classification system was used to provide consistency with the National Vegetation Classification System and is currently the statewide standard for vegetation mapping (Section 1900 of the California Fish and Game Code).

Aquatic Resources Survey

A preliminary aquatic resources survey was conducted on foot on March 25, 2024 to identify potential aquatic resources within accessible areas of the Project study area for each of the three areas. Potential aquatic resources boundaries were mapped by hand on printed 1:2,400-scale 2019 aerial maps, with the widths of each feature recorded (in feet) with locational data using the Esri Collector for ArcGIS application on an iPhone 15 connected to a Global Positioning System. Notes describing aquatic resource type, substrate type, flow regime, presence or absence of vegetation, and any other pertinent details regarding observed hydrology were taken at each feature. All potential aquatic resources were later digitized using geographic information system software.

For the purposes of this memo, potential aquatic resources were mapped using United States Army Corps of Engineers (USACE) methods and surface indicators of hydrology and hydrophytic vegetation to establish preliminary boundaries. Methods to determine the limits of potential aquatic resources are outlined in USACE's *Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008c), and *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008b).

When potential aquatic resources were encountered in linear features, the length of the drainage feature was walked, and the outer jurisdictional limits within the Project study areas were recorded. The ordinary high water mark (OHWM) was measured at locations where indicators were apparent. Other data recorded included bank-to-bank width, bank height and morphology, substrate type, and all vegetation within and adjacent to the feature. Constructed ephemeral features that were created in uplands and clearly intended only to convey roadway or urban runoff were mapped as ditches constructed in uplands and were not considered jurisdictional.

Regional Water Quality Control Board (RWQCB) regulated waters would generally be identical to USACE jurisdictional areas, however, additional isolated features that may exhibit wetland features as defined by the RWQCB's *State Wetland Definition and Procedures for the Discharge of Dredged or Fill Material to Waters of the State* (2019) would need to be evaluated. California Department of Fish and Wildlife (CDFW) regulated habitat, defined by California Fish and Game Code Section 1602, would generally include ephemeral, intermittent, and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated, or to the limit of the adjacent riparian habitat located contiguous to the watercourse if the stream or lake is vegetated. California Coastal Commission coastal wetlands would generally be identical to CDFW regulated habitat using a "one-parameter definition" that only requires evidence of a single parameter to establish wetland conditions.

Results

Existing Environmental Conditions and Project Effects

Climate

San Clemente has a Mediterranean climate, characterized by warm, dry summers and cool, moist winters. Average annual precipitation for San Clemente is 15.2 inches and most of the annual rainfall occurs November through March (U.S. Climate Data 2020).

Soils

The online NRCS Web Soil Survey was referenced to identify potential hydric soils occurring within each of the Project study areas (USDA NRCS 2024). The following soils are mapped within the Project study areas (see Attachment B):

- **Beaches**: The Beach Series comprises very shallow and shallow, well drained, moderately permeable soils that formed in residuum from hard, very fine grained, metamorphic sandstone. These sloping to steep soils commonly occur on sandstone hills and in valleys. Slopes range from 1 to about 70 percent.
    - This soil is listed hydric (Criterion 4) where it occurs on beaches.
- **Myford Sandy Loam**: The soils of the Myford Series are deep, moderately well drained soils formed on terraces. Myford soils occur on terraces at elevations of less than 1,500 feet. The climate is dry subhumid mesothermal with dry summers and cool moist winters.
- **Xeralfic Arents**: The soils of the Xeralfic Series are moderately well-drained or well-drained soils with characteristics that are most likely altered by mechanical mixing or, if undisturbed, are former argillic horizons remnants. Generally sandy clay loam in texture after reshaping and found at elevations of 50 to 1,500 feet.

Vegetation Communities and Other Land Cover Types

The descriptions of the vegetation community alliances below are taken directly from A Manual of California Vegetation (Sawyer et al. 2009). Eleven different vegetation communities and other land cover types were mapped within the Project study area for each of the three areas and are described below (Table 1). Figure 2 identifies the locations of the vegetation communities and other land cover types within the Project study area for each of the three areas. Attachment C shows photographs of the Project study area.

Table 1. Vegetation Communities and Other Land Cover Types within the Project Study Areas

Vegetation Community	Area #1	Area #2	Area #4	Total Acres
Tree-Dominated Habitats				
Myoporum Groves	0.167	1.488	0.216	1.870
Shrub-Dominated Habitats				
Big Saltbush Scrub	0.495	1.736	2.767	4.997
California Brittlebush Scrub	0.057		3.732	3.789
Herb-Dominated Habitats				
Giant Reed Marsh			0.054	0.054
Iceplant Mats	0.252	0.401	0.383	1.035
Cattail Marsh		0.006		0.006
Other Land Cover Types				
Beach	0.248		3.941	4.189
Coastal Bluffs			2.140	2.140
Disturbed	0.314	1.032	1.676	3.021
Open Water	0.552	2.680		3.232
Ornamental	0.161	0.201	0.080	0.442
Unvegetated Channel		0.010		0.010
Unvegetated Channel – Concrete Lined		0.012		0.012
Urban/Developed	0.386	1.347	2.997	4.731
Urban/Developed – Riprap	0.203	1.692	0.170	2.066
Grand Total	***2.835***	***10.605***	***18.155***	***31.595***

TREE-DOMINATED HABITATS

Myoporum Groves (*Myoporum laetum* Forest & Woodland Semi-Natural Alliance)

Within this alliance, myoporum (*Myoporum laetum*) is dominant in the tree canopy. Trees are less than 59 feet (18 meters) tall with an open to continuous canopy, shrubs are common to infrequent, and the herbaceous layer is simple to diverse. Myoporum accounts for at least 50 percent cover in the tree layer. Myoporum groves occur in coastal canyons, washes, slopes, riparian areas, and along roadsides (Sawyer et al. 2009). Within the Project study areas, Myoporum groves cover 1.870 acres and covers areas near the coastal bluffs and areas with ornamental vegetation.

SHRUB-DOMINATED HABITATS

Big Saltbush Scrub (*Atriplex Lentiformis* Shrubland Alliance)

Big saltbush (*Atriplex lentiformis*) is dominant in the shrub canopy and emergent trees may be present in low cover. Shrubs are less than 16 feet (5 meters) tall and the canopy is open to intermittent with a variable herbaceous layer. Within this alliance, big saltbush accounts for greater than 50 percent relative cover in the shrub canopy. Big saltbush scrub occurs on gentle to steep southeast and southwest-facing slopes in clay soils (Sawyer et al. 2009). Within the Project study areas, big saltbush scrub covers 4.997 acres and occurs as dense patches adjacent to the railroad ROW on the coastal bluffs.

California Brittlebush Scrub (*Encelia californica* Shrubland Alliance)

California brittle bush (*Encelia californica*) is dominant or co-dominant in the shrub canopy with California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), bladderpod (*Cleomella arborea*) and a variety of other shrub species. Emergent trees may be present, including southern California black walnut (*Juglans californica*) or coast live oak (*Quercus agrifolia*). Shrubs are less than 7 feet (2 meters) tall with an intermittent to continuous canopy and a variable herbaceous layer. California brittle bush accounts for at least 30 percent relative cover in the shrub layer. California brittle bush scrub occurs on sunny, steep slopes that are often rocky or eroded and on soils that formed from sandstone, shale, or volcanic substrates (Sawyer et al. 2009). California brittle bush scrub covers 3.789 acre with the Area #1 and Area #4 study areas.

HERB-DOMINATED HABITATS

Giant Reed Marsh (*Arundo donax* Herbaceous Semi-Natural Alliance)

Giant reed marsh is dominated by giant reed (*Arundo donax*), with at least 60 percent relative cover in the herbaceous layer. Giant reeds are rhizomatous and grow in dense colonies that form uniform stands. This alliance usually occurs in riparian areas along low-gradient streams and ditches and in semi-permanently flooded and slightly brackish marshes. Herbaceous plants are typically less than 8 meters in height, with continuous cover (Sawyer et al. 2009). Giant reed marsh occurs as a patch in the Area #4 study area and covers 0.054 acre.

Iceplant Mats (*Mesembryanthemum* spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance)

This community is dominated by various ice plant species, such as crystalline iceplant (*Mesembryanthemum crystallinum*), freeway iceplant (*Carpobrotus edulis*), sea fig (*Carpobrotus chilensis*), and slenderleaf iceplant (*Mesembryanthemum nodiflorum*). Within this community, iceplant provides dense (>80 percent) cover, which precludes other plant species from establishing (Sawyer et al. 2009). Within the Project study areas, this community covers 1.035 acre along the coastal bluffs.

Cattail Marsh (*Typha* sp. Herbaceous Alliance)

Cattail marsh is dominated by one or more species of cattail (*Typha* spp.), with at least 50 percent relative cover in the herbaceous layer. Cattails are rhizomatous and grow in dense colonies forming uniform stands that are not closly associated with other plants except generally as wetland affliates. This alliance usually occurs in semi-permanently flooded freshwater or brackish marshes. Herbaceous plants are typically less than 5 feet (1.5 meters) in height, with intermittent-to-continuous cover (Sawyer et al. 2009). Cattail marsh covers 0.006 acre associated with a patch at the toe of slope of

the coastal bluffs within the Area #2 study area. Water was observed seeping from the seep and flowing towards this patch, however, the patch looks to have been regularly disturbed and maintained.

OTHER LAND COVER TYPES

Beach

This community consists of unvegetated sandy beach and covers 4.189 acres, mostly associated with the beach areas within the Area #1 and Area #4 study areas.

Coastal Bluffs (unvegetated)

This community consists of unvegetated coastal bluffs and covers 2.140 acres within the Area #4 study area.

Disturbed

Areas labeled disturbed are areas where natural communities have been impacted to the extent that they no longer function naturally. These areas have been previously physically disturbed but continue to retain a soil substrate. Disturbed areas consist of predominantly non-native weedy and ruderal species. This is not a natural community and generally does not provide habitat for wildlife or special-status species, although exceptions occur. Examples of disturbed areas include areas that have been graded for development or cleared for fuel management, staging areas, off-road vehicle trails, and abandoned home or business lots. Disturbed areas cover 3.021 acre associated with areas adjacent to the railroad ROW.

Ornamental (Planted)

Areas with ornamental vegetation are typically found near development, along streets, and in parks. This vegetation usually consists of irrigated plants and trees that are not native but may include native species that are intentionally planted. Plant species observed within the Project study areas include agave (*Agave* sp.), aloe (*Aloe* sp.), palm trees (*Washingtonia* sp.), and Canarian sea lavender (*Limonium perezii*). Within the Project study areas, ornamental vegetation is located along the coastal bluffs adjacent to residential development. Ornamental vegetation covers approximately 0.442 acre.

Open Water

Open water occur as the Pacific Ocean and covers 3.232 acres within the Area #1 and Area #2 study areas.

Urban/Developed

Urban/developed land refers to areas that have been manipulated by grading and compacting soils to build infrastructure, such as roads, buildings, parks, fields, etc. These areas have no biological function or value except that they may provide habitat for nesting birds. Within the Project study areas, paved roads, associated landscaping, and portions of the railroad ROW were mapped as urban/developed. Urban/developed habitat occupies approximately 6.796 acres of the Project study areas, of which 2.066 acres consist of riprap on the seaside of the railroad tracks.

Unvegetated Channel

Unvegetated channels are natural or artificial (e.g., concrete lined) beds in which water flows and does not support vegetation. Both concrete lined and unvegetated earthen channels occur within the Area #2 study area. One unvegetated earthen channel occurs in the northern portion of the Area #2 study

area and one concrete lined channel occurs in the southern portion of the Area #2 study area associated with the pedestrian trail and southern parking lot. Unvegetated channels cover approximately 0.022 within the Area #2 study area, of which 0.012 is concrete lined.

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Figure 2. Vegetation Communities and Land Cover Types (Area #1)

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Figure 3. Vegetation Communities and Land Cover Types (Area #2, Sheet 1)

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Figure 4. Vegetation Communities and Land Cover Types (Area #2, Sheet 2)

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Figure 5. Vegetation Communities and Land Cover Types (Area #4, Sheet 1)

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Figure 6. Vegetation Communities and Land Cover Types (Area #4, Sheet 2)

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Figure 7. Vegetation Communities and Land Cover Types (Area #4, Sheet 3)

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Sensitive Vegetation Communities

RIPARIAN HABITAT AND SPECIAL-STATUS VEGETATION COMMUNITIES

A special-status vegetation community is one that has a state rarity rank of S1, S2, or S3, as determined by the NatureServe Heritage Program Status Ranking system (Faber-Langendoen et al. 2012) or is identified as subject to local, state, or federal regulations (e.g., vegetation communities meeting USACE's three-parameter wetland criteria). Definitions of the state ranks are as follows:

- S1: Critically imperiled and at a very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors.
- S2: Imperiled and at high risk of extinction or elimination due to a very restricted range, very few populations or occurrences, steep declines, or other factors.
- S3: Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

California brittlebush scrub is considered special-status due to its their state rarity ranking (S3).

Riparian vegetation, which includes communities that are associated with streambeds, wetlands, and adjacent riparian areas, are also considered special-status by CDFW regardless of their state rarity ranking and are regulated pursuant to Section 1600, et seq. of the California Fish and Game Code. Riparian communities mapped within the Project study area includes cattail marsh and giant reed.

CALIFORNIA COASTAL COMMISSION – ENVIRONMENTALLY SENSITIVE HABITAT AREAS

According to the City of San Clemente Local Coastal Program Land Use Plan (City of San Clemente 2018), environmentally sensitive habitat areas include monarch butterfly habitat, sand dunes, coastal sage scrub that supports coastal California gnatcatcher or other rare species, California buckwheat scrub, lemonade berry scrub, big saltbush scrub, giant wild rye and other native grassland, maritime succulent scrub, southern mixed chaparral, arroyo willow thickets, ephemeral stream channels, riparian habitat, vernal pools, and wetlands. Within the Project study areas, ESHAs would include big saltbush scrub, cattails, and any potential wetlands.

Federally Listed Plant Species

Based on review of the literature search results (Attachment A), of the 93 special-status vascular plant species evaluated, none have the potential to occur within the Project study areas based on a lack of suitable habitat. Therefore, the Project would not result in an adverse effect to any plant species that are federally listed or proposed for listing.

Special-Status Plant Species

The remaining special-status plant species identified in the literature search are not federally or state listed but are California Rare Plant Rank (CRPR) List[1] 1B, 2B, 3, or 4 plants. Details for these species, including habitat, life form, blooming period, and potential to occur within the Project study area, are

[1] California Rare Plant Rank (CRPR) 1B=Plants rare, threatened, or endangered in California and elsewhere; CRPR 2B=Plants rare, threatened or endangered in California but more common elsewhere; CRPR 3=Plants needing more information; CRPR 4=Plants of limited distribution. Threat ranks: 0.1=Seriously endangered in California. 0.2=Fairly endangered in California.

provided in Attachment A. Of the special-status plant species identified from the literature search, 13 species have potential to occur in the Project study area. Focused plant surveys are recommended to determine the presence or absence of special-status plant species within the Project study area. The remaining special-status plant species are not expected to occur due to a lack of suitable habitat and/or soils or because the Project study area is located outside of the species' known geographic or elevation range.

Federally Listed Wildlife Species

Based on the results of the literature review, 24 special-status wildlife species were evaluated for potential to occur within the Project study areas. Of these, two federally and/or state-listed wildlife species or candidates under consideration for listing are known to occur within the vicinity of the Project study area. These species and their listing status are:

- Invertebrates
    - Crotch's bumble bee (*Bombus crotchii*) – state candidate endangered.
    - San Diego fairy shrimp (*Branchinecta sandiegonensis*) – federally endangered.

The Project study area contains suitable habitat to support the federally and/or state-listed wildlife species listed above. The USFWS Information for Planning and Consultation search indicates that no designated critical habitat for federally listed species occurs within the Project study areas.

Descriptions of these species, their habitat requirements, and their potential habitat within the Project study areas are provided below. Attachment A identifies all special-status wildlife species known to occur in the vicinity of the Project and their potential to occur within the Project study areas.

CROTCH'S BUMBLE BEE

Crotch's bumble bee is found between San Diego and Redding in a variety of habitats including open grasslands, shrublands, chaparral, desert margins including Joshua tree and creosote scrub, and semi-urban settings. It is near endemic to California, with only a few records from Nevada and Mexico (CDFW 2019). Like most other species of bumble bees, Crotch's bumble bees primarily nests underground (Williams et al. 2014). They are generalist foragers and have been reported visiting a wide variety of flowering plants. This species has a short tongue and is best suited to forage at open flowers with short corollas (CDFW 2019). Williams et al. (2014) report plants in the genera *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia*, and *Salvia* as example food plants.

The Project study areas support approximately 10.264 acres of suitable nesting foraging and overwintering habitat primarily along the vegetated coastal bluff slopes.

SAN DIEGO FAIRY SHRIMP

San Diego fairy shrimp are generally restricted to vernal pools in southern California and northwestern Baja California, Mexico. (USFWS 2021). The Project study area supports approximately 0.029 acre of potentially suitable habitat within the isolated road ruts located along the pedestrian trail. Protocol branchiopod surveys would be required to determine presence or absence of any fairy shrimp within the Area #2 and Area #4 study areas.

WESTERN SNOWY PLOVER

Western snowy plover is considered sensitive when nesting. This species nests on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less commonly used nesting sites include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. During the winter, the species is known to nest on beaches, including beaches where the species does not normally nest, such as man-made salt ponds and estuarine sand and mud flats (USFWS 2007).

The Area #1 and Area #4 study areas supports 4.189 acres of beach habitat located along the western boundary of the railroad ROW. However, the beaches are subject to daily use by beachgoers and are not expected or known to support nesting western snowy plover. The nearest western snowy plover nesting location was documented in 2013 approximately 18 miles north of the Area #1 study area at Newport Beach.

Special-Status Wildlife Species

Based on the results of the literature review, 28 wildlife species that are not listed under FESA or CESA or candidates for listing but are considered SSCs or are fully protected have potential to occur within the Project vicinity. Of these, the following four have potential to occur in the Project study areas:

- Reptiles
    - Southern California legless lizard (*Anniella stebbinsi*) – SSC
    - Blainville's horned lizard (*Phrynosoma blainvilli*) – SSC
- Mammals
    - Pallid bat (*Antrozous pallidus*) – SSC
    - Western red bat (*Lasiurus blossevillii*) – SSC

The remaining special-status wildlife species are not expected to occur due to a lack of suitable habitat or because the Project study areas are located outside of the species' known geographic ranges. Attachment A provides details for these species, including habitat and potential to occur within the Project study areas. No non-listed special-status wildlife were observed within the Project study areas during the field survey.

Nesting Birds

Suitable habitat to support nesting birds protected under the Migratory Bird Treaty Act and California Fish and Game Code Section 3500 et seq., occurs within the Project study area and includes mature trees and shrubs. Bridge- and crevice-nesting birds could nest on the coastal bluff slopes within the Project study area. There is potential for ground-nesting birds, such as killdeer (*Charadrius vociferus*), to nest within portions of the Project study areas, however, the areas are highly disturbed by humans utilizing the beach or pedestrian trails, as well, as trains utilizing the railroads.

Aquatic Resources Potentially Subject to Local, State, and Federal Regulation

There are seven distinct aquatic features mapped within the Project study areas that have potential to be locally, state, or federally regulated. The features include freshwater marsh, the Pacific Ocean, road ruts, and unvegetated channels. Descriptions of these features are provided below and depicted

on Figures 8 and 12. Table 2 summarizes these potential aquatic resources within the Project study areas. Photographs of aquatic features are included in Attachment C.

FRESHWATER MARSH

FWM-1 consists of a small patch of cattails surrounded by saturated, bare ground. Water was observed flowing into FWM-1 from a seep located approximately 20 feet northwest on the adjacent coastal bluff. The feature is isolated and does not have a direct connection (i.e., channel) or outlet to another aquatic resource or to the Pacific Ocean. FWM-1 is located north of the pedestrian trail and has been disturbed by heavy machinery (observed tire tracks) and placement of sandbags within the feature.

A soil sample pit was not conducted within this feature, however, FWM-1 exhibits surface indicators of hydrology and a dominance of hydrophytic vegetation. The feature potentially meets the USACE three-parameter criteria for wetlands.

Within the Area #2 study area, FWM-1 is 0.006 acre and would be potentially regulated by RWQCB, CCC, and CDFW.

FWM-2 consists of a dense patch of giant reed located north of the railroad tracks at the southern end of the of the Area #4 study area. Water pools before flowing through a 24-inch concrete culvert under the railroad tracks, creating the feature, and ultimately flowing into the Pacific Ocean. A soil sample pit was not conducted within this feature, however, FWM-2 exhibits surface indicators of hydrology and a dominance of hydrophytic vegetation. The feature potentially meets the USACE three-parameter criteria for wetlands.

Within the Area #4 study area, FWM-2 is 0.054 acre and would be potentially regulated by USACE, RWQCB, CCC, and CDFW.

PACIFIC OCEAN/TIDAL WATERS

Subtidal marine waters occur within the Area #1 and Area #2 study areas and consist entirely of waters associated with the Pacific Ocean. These waters do not support kelp beds or other marine vegetation such as eel grass. The limits of the Pacific Ocean/Tidal Waters boundaries extend generally to the toe-of-slope of the riprap berm separating the railroad tracks from the Pacific Ocean/beaches. Subsequent surveys are required to determine the Section 10 and Section 404 limits for the Pacific Ocean.

Within the Area #1 study area, Pacific Ocean/tidal waters encompass 0.552 acre and within the Area #2 study area, Pacific Ocean/tidal waters encompass 2.680 acres. Pacific Ocean/tidal waters would be potentially regulated by USACE, RWQCB, CCC, and CDFW.

ROAD RUT (1 THROUGH 4)

Road Rut 1 and 2 consists of unvegetated road ruts and located within the northern portion of the Project study area, along the pedestrian trail. The two features are located east of the railroad tracks and at the base of the adjacent bluff. Road Rut 1 is approximately 32 feet in length and 10 feet wide and Road Rut 2 is approximately 155 feet in length and averages 8 feet wide. Standing water was observed within each road rut. Tire tracks from heavy machinery were observed throughout the area and may have created the road ruts as the ground was soft due to water seeping from the adjacent bluffs.

Road Rut 3 is located south of the temporary wall built to protect the railroad tracks below the Mariposa Bridge at the base of the bluff. Water was observed flowing from the southern terminus of the temporary wall towards Road Rut 3. Road Rut 3 is approximately 33 feet long and 4 feet wide. Historically, stormwater/overland flows would flow unimpeded across Road Rut 3 and discharge into a culvert and ultimately into the Pacific Ocean. However, the culvert is blocked by sediment build-up which has caused flows to back up between the railroad tracks and coastal bluff to create this feature.

Road Rut 4 is an unvegetated road rut located at the base of the coastal bluffs along the pedestrian trail within the northern portion of the Area #4 study area. Road Rut 4 is approximately 115 feet long and 15 feet wide. Water was observed within the road rut with some observations of flow from the coastal bluff immediately northeast of the feature. The feature abuts railroad barriers.

Within the Area #2 study area, Road Rut 1 is 0.006 acre, Road Rut 2 is 0.023 acre, and Road Rut 3 is 0.003 acre. Within the Area #4 study area, Road Rut 4 is 0.037 acre. Road Ruts 1, 2, and 4 would be potentially regulated by RWQCB, CCC, and CDFW. Road Rut 3 would also be potentially regulated by USACE.

UNVEGETATED CHANNEL (UVC-1 AND UVC-2)

UVC-1 consists of an unvegetated earthen channel located at the northern end of the Project study area. The channel also serves as a pedestrian pathway to access the Pacific Ocean under the railroad tracks. A concrete culvert was observed under the pedestrian pathway and a low flow channel, approximately 6-inches deep, was observed flowing the culvert through UVC-1, west towards the Pacific Ocean. UVC-1 exhibits an OHWM ranging from 10 feet near the concrete culvert to 18 feet near the railroad tracks. The channel consists of compact sand with larger boulders throughout the middle of the channel.

Within the Area #2 study area, UVC-1 is 0.010 acre and would be potentially regulated by USACE, RWQCB, CCC, and CDFW.

UVC-2 is concrete lined channels that bisect the pedestrian trail and railroad tracks within the Area #2 study area. UVC-2 originates at the outlet of a 48-inch concrete culvert and is located along the West Mariposa Road entrance to Mariposa Bridge, north of the pedestrian trail. The channel is approximately 10 feet wide and constructed with grouted riprap. UVC-2 flows west and under the railroad berm through two 26-inch concrete culverts and ultimately discharges into the Pacific Ocean. UVC-2 does not support hydrophytic vegetation and would not meet the USACE three-parameter criteria for a wetland. However, it may be regulated by USACE as a non-wetland water of the U.S., RWQCB as a non-wetland water of the State, CCC wetland, and CDFW unvegetated streambed. Within the Area #2 study area, UVC-2 is 0.012 acre.

Table 2. Potential Aquatic Resources within the Project Study Areas

Aquatic Feature	Acres	Potential Regulatory Authority			
		USACE (WOUS)	RWQCB (WOS)	CCC Wetland	CDFW Wetland/Streambed
Area #1					
Pacific Ocean	0.552	X	X	X	
Area #2					
FWM-1	0.006		X	X	X
Pacific Ocean	2.680	X	X	X	
Road Rut 1	0.006		X	X	X[1]
Road Rut 2	0.023		X	X	X[1]
Road Rut 3	0.003	X	X	X	X[1]
UVC-1	0.010	X	X	X	X
UVC-2	0.012	X	X	X	X
Area #4					
FWM-2	0.054	X	X	X	X
Road Rut 4	0.037		X	X	X[1]
Total	***3.383***				

[1] Should the feature support habitat for a sensitive species, such as listed branchiopods, CDFW may take jurisdiction.

Recommendations

The potentially regulated aquatic features described above would need to be verified through a formal delineation survey that assess their boundaries based on the criteria of each agency (USACE, RWQCB, CDFW, and CCC). Formal delineation surveys would include soil sampling points that use USACE's three-parameter criteria to determine the presence of a wetland and assessment of their connectivity to a traditionally navigable water. Formal delineation surveys would also refine the preliminary boundaries of the aquatic features described, resulting in more accurate acreages of each aquatic feature based on each agency standard.

Figure 8. Potential Aquatic Resources (Area #1)

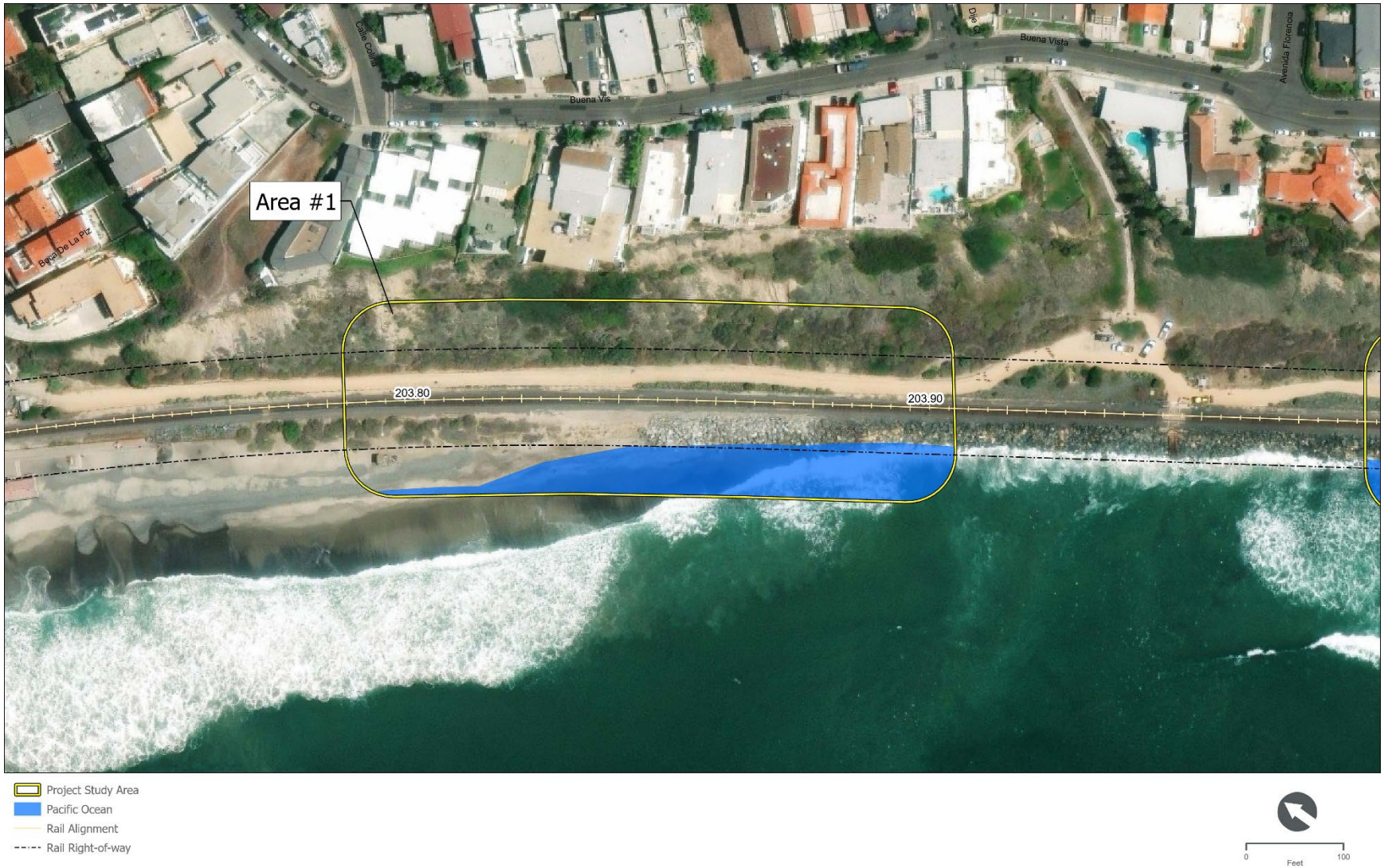

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Figure 9. Potential Aquatic Resources (Area #2, Sheet 1)

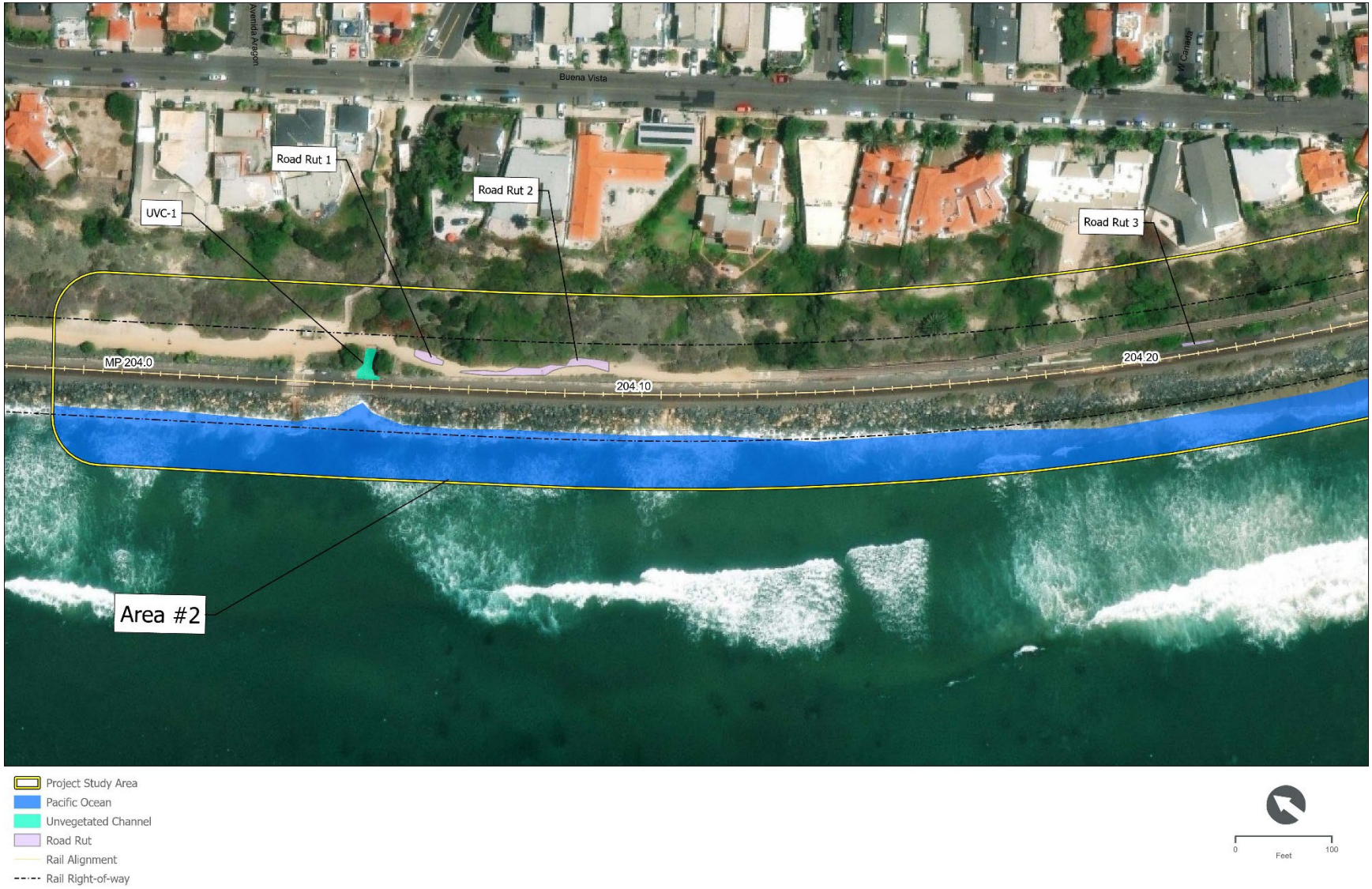

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Figure 10. Potential Aquatic Resources (Area #2, Sheet 2)

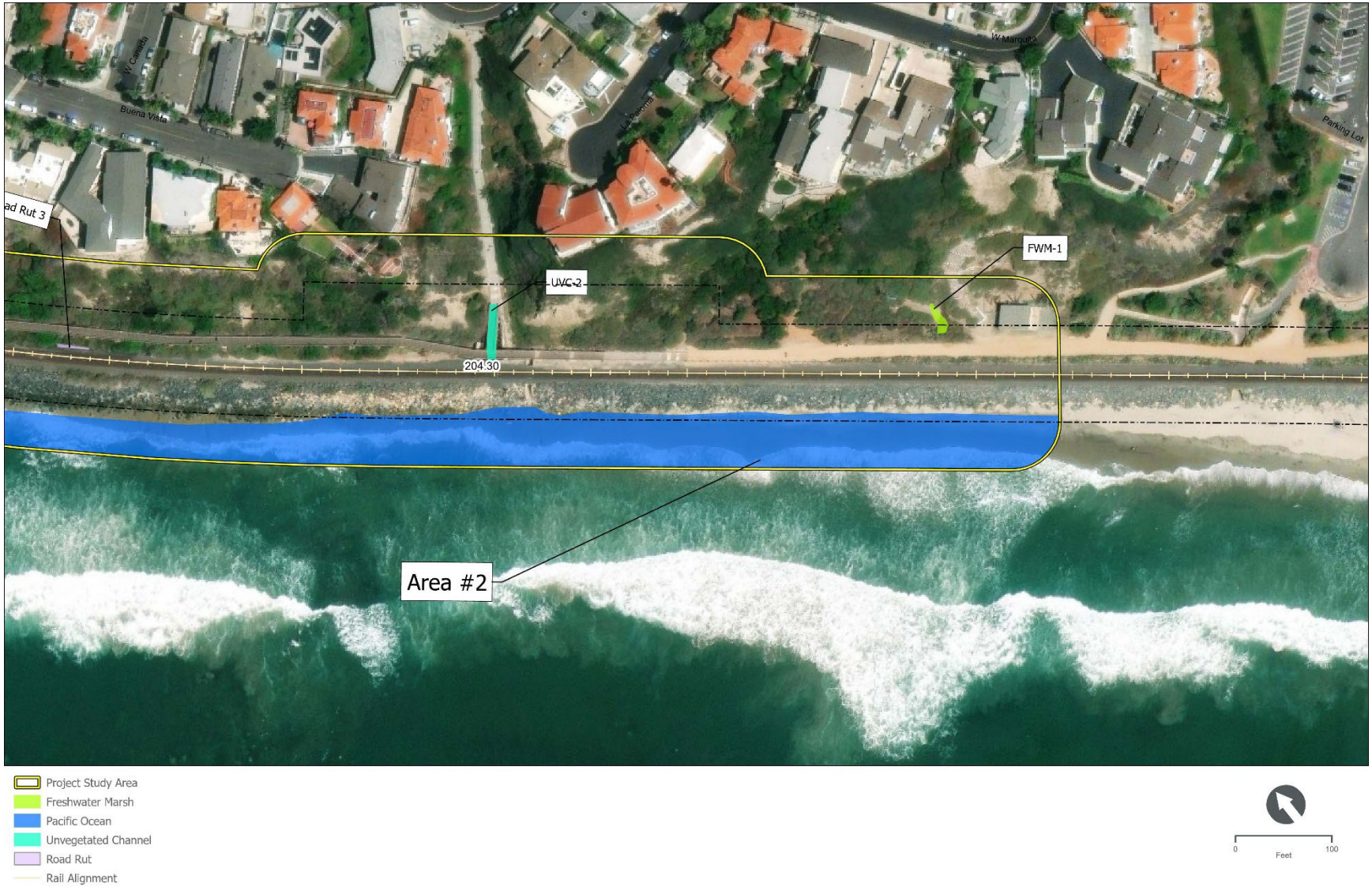

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Figure 11. Potential Aquatic Resources (Area #4, Sheet 1)

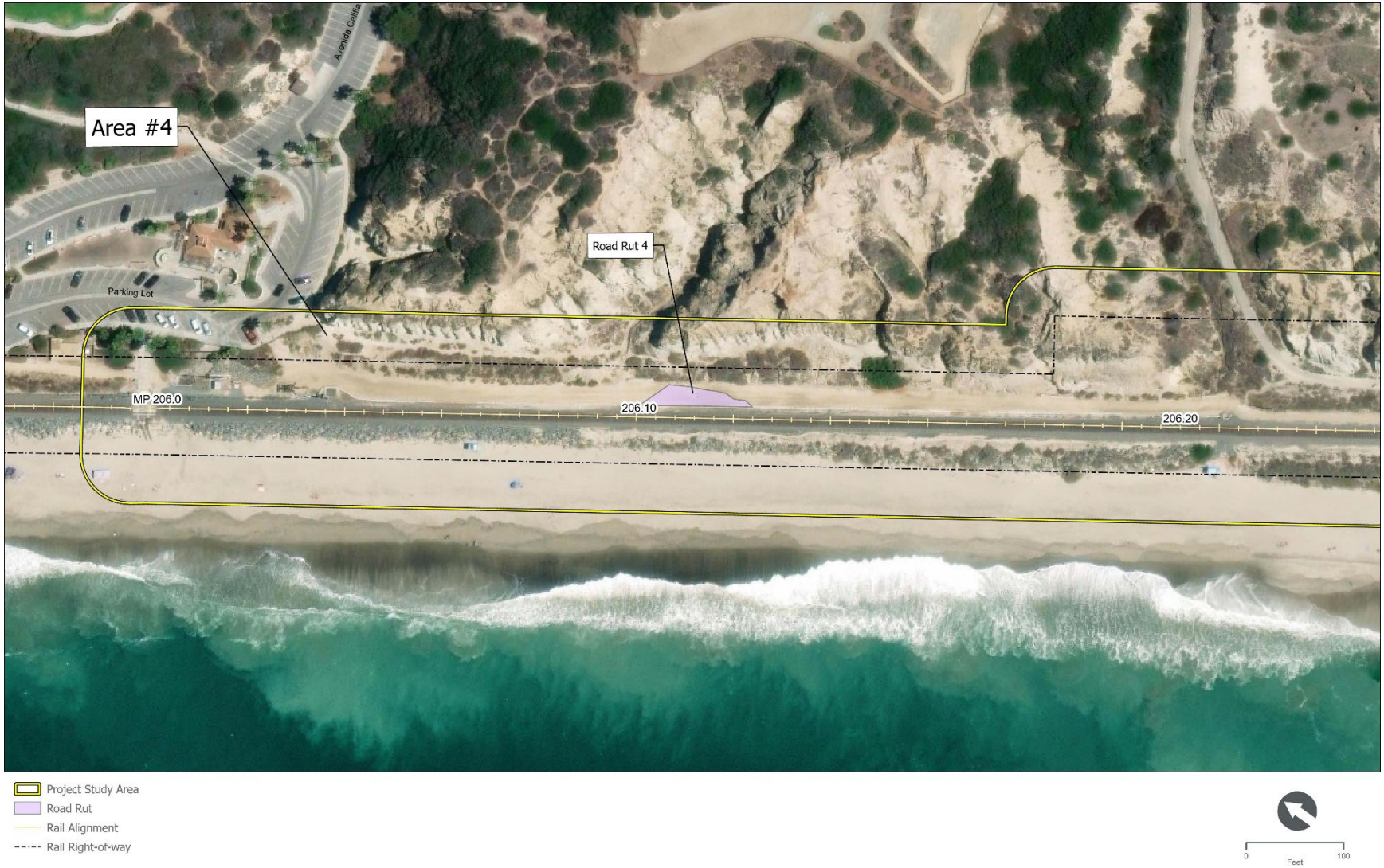

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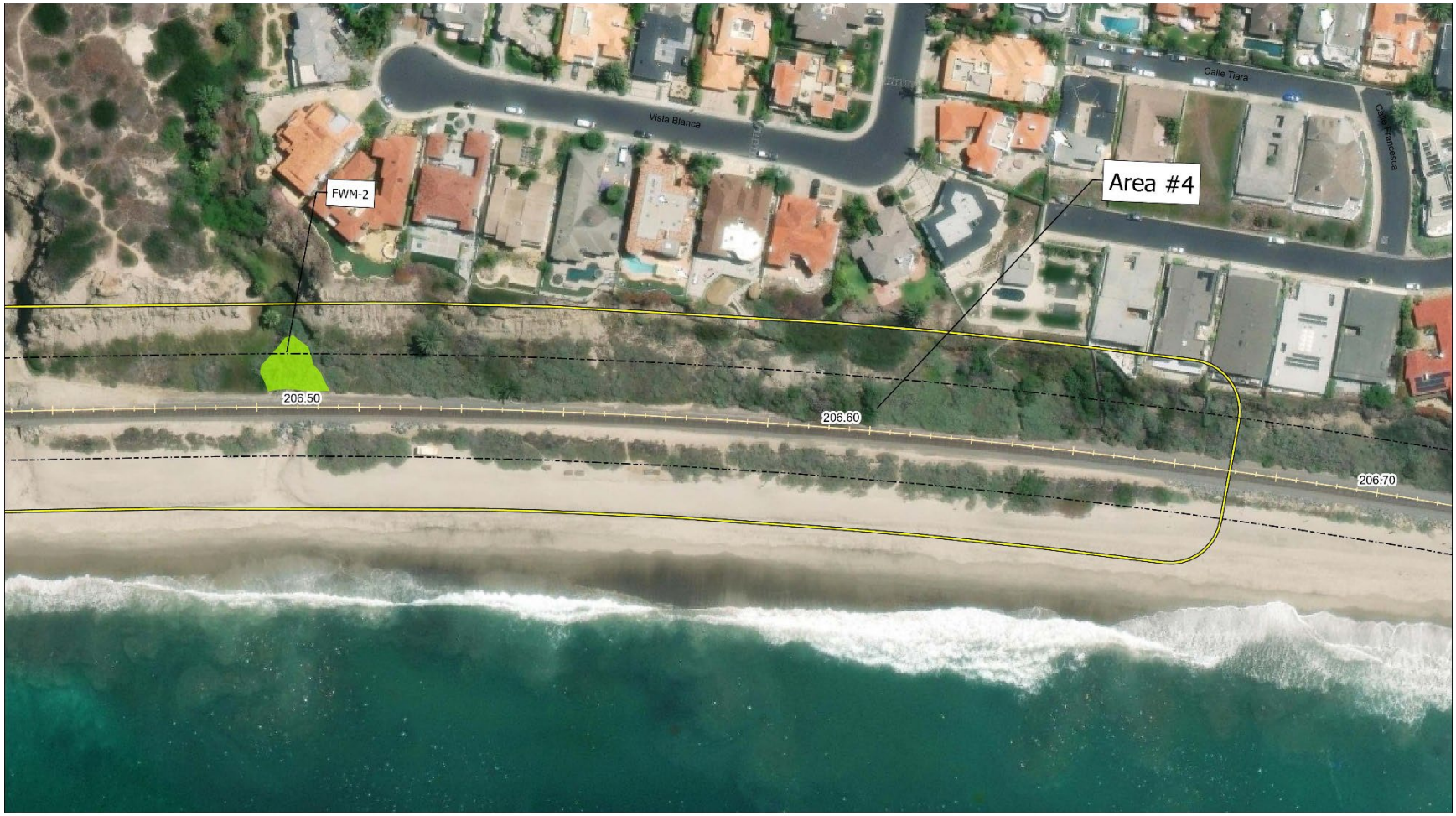
Figure 12. Potential Aquatic Resources (Area #4, Sheet 2)



Project Study Area
Freshwater Marsh
Rail Alignment
Rail Right-of-way

0 Feet 100

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Attachment A. Literature Review Results and Special Status Species Tables

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Clemente (3311745) OR San Onofre Bluff (3311735) OR Canada Gobernadora (3311755) OR Dana Point (3311746) OR San Juan Capistrano (3311756) OR Laguna Beach (3311757))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S4	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S1	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T3	S3	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S2	SSC
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1	S1	1B.1
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G3G4	S1	SSC
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2G3	S2	1B.2
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Threatened	Threatened	G2	S3	
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Dudleya stolonifera Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S3	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium pendletonense Pendleton button-celery	PDAPI0Z120	None	None	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S4	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lycium brevipes var. hassei Santa Catalina Island desert-thorn	PDSOL0G0N0	None	None	G5T1Q	S1	3.1
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Pentachaeta aurea ssp. allenii Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T2	S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Plestiodon skiltonianus interparietalis Coronado skink	ARACH01114	None	None	G5T5	S2S3	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3	SSC
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Cottonwood Willow Riparian Forest						
Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
Southern Dune Scrub						
Southern Foredunes	CTT21230CA	None	None	G2	S2.1	
Southern Foredunes						
Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest						
Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Sycamore Alder Riparian Woodland						
Spea hammondii	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western spadefoot						
Sternula antillarum browni	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California least tern						
Streptocephalus woottoni	ICBRA07010	Endangered	None	G1G2	S2	
Riverside fairy shrimp						
Suaeda esteroa	PDCHE0P0D0	None	None	G3	S2	1B.2
estuary seablite						
Taricha torosa	AAAAF02032	None	None	G4	S4	SSC
Coast Range newt						
Taxidea taxus	AMAJF04010	None	None	G5	S3	SSC
American badger						
Thamnophis hammondii	ARADB36160	None	None	G4	S3S4	SSC
two-striped gartersnake						
Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Needlegrass Grassland						
Verbesina dissita	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
big-leaved crownbeard						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S3	
least Bell's vireo						

Record Count: 97

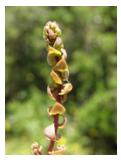
CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

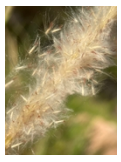
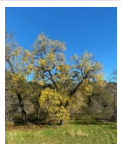
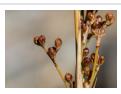
52 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3311757:3311745:3311735:3311755:3311746:3311756**], **0** feet between Plant low elevation and high elevation, **200** feet between Plant low elevation and high elevation

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	GENERAL HABITATS	LOWEST ELEVATION (FT)	HIGHEST ELEVATION (FT)	PHOTO
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	None	None	G3G4	S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub	5	1000	 © 2010 Larry Sward
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland	15	3000	No Photo Available
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S1S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland	10	1510	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas	0	460	No Photo Available
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G1G2	S1	1B.1		Chenopod scrub, Playas, Vernal pools	80	6235	No Photo Available
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2		Coastal bluff scrub, Coastal scrub	35	655	No Photo Available
Bahiopsis laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	G4	S4	4.3		Chaparral, Coastal scrub	195	2460	No Photo Available

Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools	80	3675	© 2016 Keir Morse
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	50	2295	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1		Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools	0	1575	No Photo Available
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	None	None	G5T1	S1	1B.1		Coastal bluff scrub (sandy), Coastal dunes	0	330	No Photo Available
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	None	None	G5T3	S3	1B.2		Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	100	5020	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2		Coastal bluff scrub, Coastal scrub, Valley and foothill grassland	15	985	No Photo Available
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	G3T2	S2	1B.2		Chaparral, Cismontane woodland	100	2590	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		Chaparral (openings), Coastal scrub, Valley and foothill grassland	100	2430	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		Coastal scrub, Valley and foothill grassland, Vernal pools	80	3085	No Photo Available

Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2		Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	165	1640	No Photo Available
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1		Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland	15	1475	© 2011 Aaron E. Sims
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	Chaparral, Coastal scrub, Valley and foothill grassland	50	2590	No Photo Available
Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	FT	CT	G1	S1	1B.1	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	35	855	No Photo Available
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2	Yes	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub	35	1805	No Photo Available
Eryngium pendletonense	Pendleton button-celery	Apiaceae	perennial herb	Apr-Jun(Jul)	None	None	G1	S1	1B.1	Yes	Coastal bluff scrub, Valley and foothill grassland, Vernal pools	50	360	© 2009 Vince Scheidt
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	(Oct)Dec-Aug	None	None	G5	S2	2B.2		Coastal bluff scrub, Coastal scrub, Mojavean desert scrub	35	1640	No Photo Available
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2		Chaparral, Coastal scrub, Valley and foothill grassland	65	3135	© 2015 Keir Morse
Holocarpha virgata ssp. *elongata*	graceful tarplant	Asteraceae	annual herb	May-Nov	None	None	G5T3	S3	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	195	3610	© 2013 Anna Bennett

Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools	15	3280	No Photo Available
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub	0	3985	 © 2020 Matt C. Berger
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	None	None	G3G5T2T3	S2	1B.2		Chaparral, Coastal scrub (often disturbed areas, sandy)	35	820	No Photo Available
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland	165	2955	 © 2020 Zoya Akulova
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2		Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)	10	2955	 © 2019 Belinda Lo
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		Marshes and swamps (coastal salt), Playas, Vernal pools	5	4005	© 2013 Keir Morse
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		Chaparral, Coastal scrub	5	2905	© 2015 Keir Morse
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	50	1000	© 2015 Aaron Schusteff

Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland	100	5905	© 2008 Thomas Stoughton
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	G4	S4	4.2		Coastal bluff scrub, Coastal scrub	15	490	No Photo Available
Malacothrix saxatilis var. *saxatilis*	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	None	None	G5T4	S4	4.2	Yes	Coastal bluff scrub, Coastal scrub	10	655	No Photo Available
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	Asteraceae	annual herb	Mar-May	None	None	G4T4	S4	4.2		Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools	50	3510	© 2015 Richard Spellenberg
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1		Valley and foothill grassland, Vernal pools (alkaline)	65	2100	No Photo Available
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		Marshes and swamps (lake margins, riverbanks)	15	1640	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools	10	3970	No Photo Available
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1		Vernal pools	50	2165	No Photo Available
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	None	None	G5?T3Q	S3	3.2		Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	15	985	No Photo Available
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	None	None	G3	S3S4	4.2		Chaparral, Cismontane woodland, Valley and foothill grassland	50	5200	No Photo Available

Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2		Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland	0	6890	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1		Chaparral, Closed-cone coniferous forest, Coastal scrub	50	1310	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		Chaparral, Coastal scrub	65	3935	No Photo Available
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb		None	None	G3G4	S3	4.1		Chaparral, Coastal scrub	65	2100	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		Chaparral, Cismontane woodland, Coastal scrub	50	2625	No Photo Available
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas	50	5020	No Photo Available
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(Jan-May)Jul-Oct	None	None	G3	S2	1B.2		Marshes and swamps (coastal salt)	0	15	No Photo Available
Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	None	None	G4	S4	4.2		Coastal bluff scrub, Coastal dunes, Marshes and swamps (coastal margins)	0	165	No Photo Available
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	FT	CT	G1G2	S1	1B.1		Chaparral (maritime), Coastal scrub	150	675	No Photo Available

Showing 1 to 52 of 52 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 21 March 2024].

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
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Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To: 03/21/2024 19:25:30 UTC
Project Code: 2024-0066421
Project Name: OCTA Coastal Rail Resiliency Study Site 1 MP 203.80-203.90

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2024-0066421

Project Name: OCTA Coastal Rail Resiliency Study Site 1 MP 203.80-203.90

Project Type: Railroad - Maintenance/Modification

Project Description: The coastal Rail Corridor in southern Orange County is owned by OCTA and operated by the Southern California Regional Rail Authority (SCRRA or Metrolink) and Amtrak Pacific Surfliner for passenger service and by the Burlington Northern-Santa Fe Railroad (BNSF) for freight service. This segment of railroad is part of the greater 351-mile Los-Angeles-San Diego-San Luis Obispo Rail Corridor (LOSSAN Corridor). The Department of Defense (DOD) has designated this key railroad line as a part of the Strategic Rail Corridor Network (STRACNET). Over the past three years, coastal Rail Corridor operations have been adversely affected by the processes of coastal bluff erosion, beach loss, revetment loss, and bluff failures. Recent bluff failures at MP 204.2 Mariposa Pedestrian Bridge, MP 204.6 Casa
Romantica, and reactivation of an ancient landslide at MP 206.7 Cyprus Shore have resulted in significant
interruptions to railroad operations. The coastal Rail Corridor is subject to future similar threats, which can further impact railroad operations. OCTA, along with its rail operators, are seeking solutions to further reinforce this critical Rail Corridor.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.42936625,-117.6300698211223,14z

Counties: Orange County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Pacific Pocket Mouse *Perognathus longimembris pacificus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8080	Endangered

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered

REPTILES

NAME	STATUS
Southwestern Pond Turtle *Actinemys pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4768	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3762	Endangered
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

FISHES

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat.	Endangered

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/57	

INSECTS

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

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	HDR Engineering
Name:	Aaron Newton
Address:	591 Camino de la Reina Suite 300
Address Line 2:	Suite 300
City:	San Diego
State:	CA
Zip:	92108
Email	aaron.newton@hdrinc.com
Phone:	8057980563

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 33º 25' 45" N, Longitude = 118º 22' 12" W
Decimal Degrees: Latitude = 33.429, Longitude = -117.630

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Coastal Pelagic Species	ALL	Pacific	
		Finfish	ALL	Pacific	
		Groundfish	ALL	Pacific	Groundfish
		Krill - Euphausia Pacifica	ALL	Pacific	
		Krill - Thysanoessa Spinifera	ALL	Pacific	
		Other Krill Species	ALL	Pacific	

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific, Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
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Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To: 03/21/2024 19:40:08 UTC
Project Code: 2024-0066432
Project Name: OCTA Coastal Rail Resiliency Study Site 2 MP 204.0-204.40

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

To Whom It May Concern:

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2024-0066432

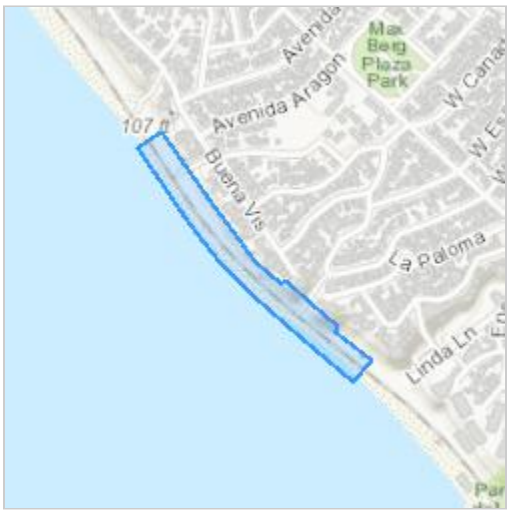
Project Name: OCTA Coastal Rail Resiliency Study Site 2 MP 204.0-204.40

Project Type: Railroad - Maintenance/Modification

Project Description: The coastal Rail Corridor in southern Orange County is owned by OCTA and operated by the Southern California Regional Rail Authority (SCRRA or Metrolink) and Amtrak Pacific Surfliner for passenger service and by the Burlington Northern-Santa Fe Railroad (BNSF) for freight service. This segment of railroad is part of the greater 351-mile Los-Angeles-San Diego-San Luis Obispo Rail Corridor (LOSSAN Corridor). The Department of Defense (DOD) has designated this key railroad line as a part of the Strategic Rail Corridor Network (STRACNET). Over the past three years, coastal Rail Corridor operations have been adversely affected by the processes of coastal bluff erosion, beach loss, revetment loss, and bluff failures. Recent bluff failures at MP 204.2 Mariposa Pedestrian Bridge, MP 204.6 Casa
Romantica, and reactivation of an ancient landslide at MP 206.7 Cyprus Shore have resulted in significant
interruptions to railroad operations. The coastal Rail Corridor is subject to future similar threats, which can further impact railroad operations. OCTA, along with its rail operators, are seeking solutions to further reinforce this critical Rail Corridor.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.425439850000004,-117.62670773374893,14z



Counties: Orange County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 18 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Pacific Pocket Mouse *Perognathus longimembris pacificus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8080	Endangered
Stephens' Kangaroo Rat *Dipodomys stephensi (incl. D. cascus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Threatened

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Ridgway"s Rail *Rallus obsoletus levipes* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6035	Endangered
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered

REPTILES

NAME	STATUS
Southwestern Pond Turtle *Actinemys pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4768	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3762	Endangered
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species.	Proposed Threatened

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/5425	

FISHES

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

INSECTS

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

CRUSTACEANS

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8148	Endangered
San Diego Fairy Shrimp *Branchinecta sandiegonensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6945	Endangered

FLOWERING PLANTS

NAME	STATUS
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
San Diego Button-celery *Eryngium aristulatum var. parishii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5937	Endangered
San Diego Thornmint *Acanthomintha ilicifolia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/351	Threatened
Thread-leaved Brodiaea *Brodiaea filifolia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6087	Threatened

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	HDR Engineering
Name:	Aaron Newton
Address:	591 Camino de la Reina Suite 300
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City:	San Diego
State:	CA
Zip:	92108
Email	aaron.newton@hdrinc.com
Phone:	8057980563

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Clemente (3311745) OR San Onofre Bluff (3311735) OR Las Pulgas Canyon (3311734) OR Margarita Peak (3311744) OR Canada Gobernadora (3311755) OR Dana Point (3311746) OR Sitton Peak (3311754) OR San Juan Capistrano (3311756))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S4	WL
Allium marvinii Yucaipa onion	PMLIL02330	None	None	G1	S1	1B.2
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos rainbowensis Rainbow manzanita	PDERI042T0	None	None	G2	S2	1B.1
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Baccharis vanessae Encinitas baccharis	PDAST0W0P0	Threatened	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S1	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Brodiaea orcuttii Orcutt's brodiaea	PMLIL0C0B0	None	None	G2	S2	1B.1
Brodiaea santarosae Santa Rosa Basalt brodiaea	PMLIL0C0G0	None	None	G1	S1	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T3	S3	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S2	SSC
Ceanothus pendletonensis Pendleton ceanothus	PDRHA04450	None	None	G1	S1	1B.2
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1	S1	1B.1
Chaetodipus californicus femoralis Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G3G4	S1	SSC
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2G3	S2	1B.2
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coleonyx variegatus abbotti San Diego banded gecko	ARACD01031	None	None	G5T5	S1S2	SSC
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Diadophis punctatus similis San Diego ringneck snake	ARADB1001A	None	None	G5T4	S2?	
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Threatened	Threatened	G2	S3	
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Dudleya stolonifera Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S3	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
Eryngium pendletonense Pendleton button-celery	PDAPI0Z120	None	None	G1	S1	1B.1
Erysimum ammophilum sand-loving wallflower	PDBRA16010	None	None	G2	S2	1B.2
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Ferocactus viridescens San Diego barrel cactus	PDCAC08060	None	None	G3?	S2S3	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Horkelia truncata Ramona horkelia	PDROS0W0G0	None	None	G3	S3	1B.3
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S4	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Leptosyne maritima sea dahlia	PDAST2L0L0	None	None	G2	S1S2	2B.2
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Lycium brevipes var. hassei Santa Catalina Island desert-thorn	PDSOL0G0N0	None	None	G5T1Q	S1	3.1
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Nemacaulis denudata var. denudata coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Pentachaeta aurea ssp. allenii Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T2	S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Plestiodon skiltonianus interparietalis Coronado skink	ARACH01114	None	None	G5T5	S2S3	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rallus obsoletus levipes light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
San Diego Mesa Hardpan Vernal Pool San Diego Mesa Hardpan Vernal Pool	CTT44321CA	None	None	G2	S2.1	
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coastal Salt Marsh Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Southern Dune Scrub Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
Southern Foredunes Southern Foredunes	CTT21230CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S2	
Suaeda esteroa estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tetracoccus dioicus Parry's tetracoccus	PDEUP1C010	None	None	G2G3	S2	1B.2
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Tortula californica California screw moss	NBMUS7L090	None	None	G2G3	S2?	1B.2
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Verbesina dissita big-leaved crownbeard	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
Viguiera purisimae La Purisima viguiera	PDAST9T0S0	None	None	G4	S1	2B.3
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	

Record Count: 120

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

62 matches found. Click on scientific name for details

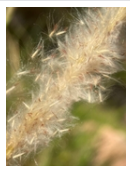
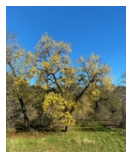
Search Criteria: 9-Quad include [**3311745:3311735:3311734:3311744:3311755:3311746:3311754:3311756**], **0** feet between Plant low elevation and high elevation, **200** feet between Plant low elevation and high elevation

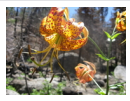
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	GENERAL HABITATS	HIGHEST ELEVATION (FT)	LOWEST ELEVATION (FT)	PHOTO
Abronia maritima	red sand-verbena	Nyctaginaceae	perennial herb	Feb-Nov	None	None	S3?	4.2		Coastal dunes	330	0	©2003 Christopher L. Christie
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	None	None	S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub	1000	5	© 2010 Larry Sward
Artemisia palmeri	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	S3?	4.2		Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland	3000	15	No Photo Available
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	S1S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland	1510	10	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	S2	1B.2		Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas	460	0	No Photo Available
Baccharis vanessae	Encinitas baccharis	Asteraceae	perennial deciduous shrub	Aug-Nov	FT	CE	S1	1B.1	Yes	Chaparral (maritime), Cismontane woodland	2360	195	No Photo Available
Bahiopsis laciniata	San Diego County viguiera	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	S4	4.3		Chaparral, Coastal scrub	2460	195	No Photo Available

Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	S2	1B.1	Yes	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools	3675	80	© 2016 Keir Morse
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	S2	1B.1	Yes	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	5550	100	© 2001 Ellen Friedman & Ted Dunning
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	S3S4	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	2295	50	No Photo Available
Centromadia parryi ssp. *australis*	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	S2	1B.1		Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools	1575	0	No Photo Available
Centromadia pungens ssp. *laevis*	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	S2	1B.1	Yes	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland	2100	0	No Photo Available
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	None	None	S1	1B.1		Coastal bluff scrub (sandy), Coastal dunes	330	0	No Photo Available

Chorizanthe polygonoides var. *longispina*	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	None	None	S3	1B.2		Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	5020	100	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	S3	4.2		Coastal bluff scrub, Coastal scrub, Valley and foothill grassland	985	15	No Photo Available
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	S2	1B.2		Chaparral, Cismontane woodland	2590	100	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	S4	4.2		Chaparral (openings), Coastal scrub, Valley and foothill grassland	2430	100	No Photo Available
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	S4	4.2		Coastal scrub, Valley and foothill grassland, Vernal pools	3085	80	No Photo Available
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	S3S4	4.2		Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	1640	165	No Photo Available
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	S2	1B.1		Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland	1475	15	© 2011 Aaron E. Sims
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	S2	1B.2	Yes	Chaparral, Coastal scrub, Valley and foothill grassland	2590	50	No Photo Available
Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	FT	CT	S1	1B.1	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	855	35	No Photo Available

Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	None	None	S2	1B.2	Yes	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub	1805	35	No Photo Available
Eryngium aristulatum var. *parishii*	San Diego button-celery	Apiaceae	annual/perennial herb	Apr-Jun	FE	CE	S1	1B.1		Coastal scrub, Valley and foothill grassland, Vernal pools	2035	65	No Photo Available
Eryngium pendletonense	Pendleton button-celery	Apiaceae	perennial herb	Apr-Jun(Jul)	None	None	S1	1B.1	Yes	Coastal bluff scrub, Valley and foothill grassland, Vernal pools	360	50	© 2009 Vince Scheidt
Erysimum ammophilum	sand-loving wallflower	Brassicaceae	perennial herb	Feb-Jun(Jul-Aug)	None	None	S2	1B.2	Yes	Chaparral (maritime), Coastal dunes, Coastal scrub	195	0	No Photo Available
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	(Oct)Dec-Aug	None	None	S2	2B.2		Coastal bluff scrub, Coastal scrub, Mojavean desert scrub	1640	35	No Photo Available
Ferocactus viridescens	San Diego barrel cactus	Cactaceae	perennial stem	May-Jun	None	None	S2S3	2B.1		Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools	1475	10	© 2009 Robert Steers
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	S3	4.2		Chaparral, Coastal scrub, Valley and foothill grassland	3135	65	© 2015 Keir Morse
Holocarpha virgata ssp. *elongata*	graceful tarplant	Asteraceae	annual herb	May-Nov	None	None	S3	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	3610	195	© 2013 Anna Bennett
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	S3S4	3.2		Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools	3280	15	No Photo Available

Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	S3	2B.1		Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub	3985	0	 © 2020 Matt C. Berger
Isocoma menziesii var. *decumbens*	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	None	None	S2	1B.2		Chaparral, Coastal scrub (often disturbed areas, sandy)	820	35	No Photo Available
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	S4	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland	2955	165	 © 2020 Zoya Akulova
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	S4	4.2		Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)	2955	10	© 2019 Belinda Lo
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	S2	1B.1		Marshes and swamps (coastal salt), Playas, Vernal pools	4005	5	© 2013 Keir Morse
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	S3	4.3		Chaparral, Coastal scrub	2905	5	© 2015 Keir Morse
Leptosyne maritima	sea dahlia	Asteraceae	perennial herb	Mar-May	None	None	S1S2	2B.2		Coastal bluff scrub, Coastal scrub	490	15	No Photo Available
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	S2S3	3	Yes	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	1000	50	© 2015 Aaron Schusteff

Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	S4?	4.2	Yes	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland	5905	100	 © 2008 Thomas Stoughton
Lycium californicum	California box-thorn	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	S4	4.2		Coastal bluff scrub, Coastal scrub	490	15	No Photo Available
Malacothrix saxatilis var. *saxatilis*	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	None	None	S4	4.2	Yes	Coastal bluff scrub, Coastal scrub	655	10	No Photo Available
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	Asteraceae	annual herb	Mar-May	None	None	S4	4.2		Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools	3510	50	© 2015 Richard Spellenberg
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	S2	3.1		Valley and foothill grassland, Vernal pools (alkaline)	2100	65	No Photo Available
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	S1S2	2B.2		Marshes and swamps (lake margins, riverbanks)	1640	15	No Photo Available
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	FT	None	S2	1B.1		Chenopod scrub, Marshes and swamps (shallow freshwater), Playas, Vernal pools	2150	100	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	S2	1B.2	Yes	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools	3970	10	No Photo Available
Nemacaulis denudata var. *denudata*	coast woolly-heads	Polygonaceae	annual herb	Apr-Sep	None	None	S2	1B.2		Coastal dunes	330	0	No Photo Available
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	FE	CE	S1	1B.1		Vernal pools	2165	50	No Photo Available

Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	None	None	S3	3.2		Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	985	15	No Photo Available
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	None	None	S3S4	4.2		Chaparral, Cismontane woodland, Valley and foothill grassland	5200	50	No Photo Available
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	S2	2B.2		Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland	6890	0	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	S3	1B.1		Chaparral, Closed-cone coniferous forest, Coastal scrub	1310	50	No Photo Available
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	S3	4.2		Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland	4265	165	No Photo Available
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	S4	4.2		Chaparral, Coastal scrub	3935	65	No Photo Available
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb		None	None	S3	4.1		Chaparral, Coastal scrub	2100	65	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	S2	2B.2		Chaparral, Cismontane woodland, Coastal scrub	2625	50	No Photo Available
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	S2	2B.2		Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas	5020	50	No Photo Available
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(Jan-May)Jul-Oct	None	None	S2	1B.2		Marshes and swamps (coastal salt)	15	0	No Photo Available

Suaeda taxifolia	woolly seablite	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	None	None	S4	4.2		Coastal bluff scrub, Coastal dunes, Marshes and swamps (coastal margins)	165	0	No Photo Available
Tortula californica	California screw moss	Pottiaceae	moss		None	None	S2?	1B.2	Yes	Chenopod scrub, Valley and foothill grassland	4790	35	No Photo Available
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	FT	CT	S1	1B.1		Chaparral (maritime), Coastal scrub	675	150	No Photo Available

Showing 1 to 62 of 62 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 21 March 2024].

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Coastal Pelagic Species	ALL	Pacific	
		Finfish	ALL	Pacific	
		Groundfish	ALL	Pacific	Groundfish
		Krill - Euphausia Pacifica	ALL	Pacific	
		Krill - Thysanoessa Spinifera	ALL	Pacific	
		Other Krill Species	ALL	Pacific	

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To: 03/21/2024 19:47:47 UTC
Project Code: 2024-0066446
Project Name: OCTA Coastal Rail Resiliency Study Site 3 MP 204.00-204.50

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2024-0066446

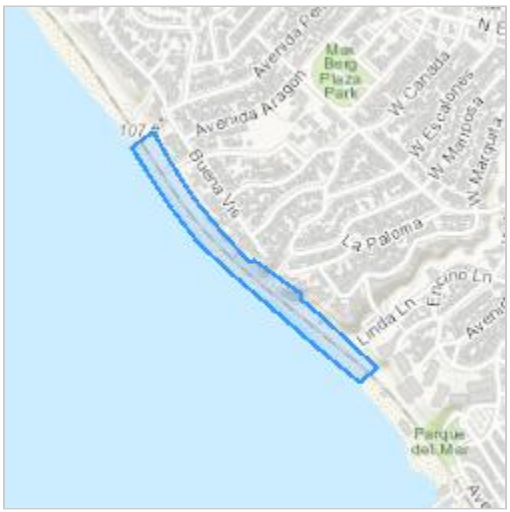
Project Name: OCTA Coastal Rail Resiliency Study Site 3 MP 204.00-204.50

Project Type: Railroad - Maintenance/Modification

Project Description: The coastal Rail Corridor in southern Orange County is owned by OCTA and operated by the Southern California Regional Rail Authority (SCRRA or Metrolink) and Amtrak Pacific Surfliner for passenger service and by the Burlington Northern-Santa Fe Railroad (BNSF) for freight service. This segment of railroad is part of the greater 351-mile Los-Angeles-San Diego-San Luis Obispo Rail Corridor (LOSSAN Corridor). The Department of Defense (DOD) has designated this key railroad line as a part of the Strategic Rail Corridor Network (STRACNET). Over the past three years, coastal Rail Corridor operations have been adversely affected by the processes of coastal bluff erosion, beach loss, revetment loss, and bluff failures. Recent bluff failures at MP 204.2 Mariposa Pedestrian Bridge, MP 204.6 Casa
Romantica, and reactivation of an ancient landslide at MP 206.7 Cyprus Shore have resulted in significant
interruptions to railroad operations. The coastal Rail Corridor is subject to future similar threats, which can further impact railroad operations. OCTA, along with its rail operators, are seeking solutions to further reinforce this critical Rail Corridor.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.425036899999995,-117.62625403557122,14z



Counties: Orange County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 18 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Pacific Pocket Mouse *Perognathus longimembris pacificus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8080	Endangered
Stephens' Kangaroo Rat *Dipodomys stephensi (incl. D. cascus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Threatened

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Ridgway"s Rail *Rallus obsoletus levipes* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6035	Endangered
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered

REPTILES

NAME	STATUS
Southwestern Pond Turtle *Actinemys pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4768	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3762	Endangered
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species.	Proposed Threatened

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/5425	

FISHES

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

INSECTS

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

CRUSTACEANS

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8148	Endangered
San Diego Fairy Shrimp *Branchinecta sandiegonensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6945	Endangered

FLOWERING PLANTS

NAME	STATUS
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
San Diego Button-celery *Eryngium aristulatum var. parishii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5937	Endangered
San Diego Thornmint *Acanthomintha ilicifolia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/351	Threatened
Thread-leaved Brodiaea *Brodiaea filifolia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6087	Threatened

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	HDR Engineering
Name:	Aaron Newton
Address:	591 Camino de la Reina Suite 300
Address Line 2:	Suite 300
City:	San Diego
State:	CA
Zip:	92108
Email	aaron.newton@hdrinc.com
Phone:	8057980563

Special-Status Plant Species Evaluated for Potential to Occur within the Study Area

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Red sand-verbena *Abronia maritima*	USFWS: None CDFW: None CRPR: 4.2	Coastal dunes. Elevation: 0–328 feet. Blooming period: February–November	No	Coastal dunes absent.
San Diego thornmint *Acanthomintha illicifolia*	USFWS: FT CDFW: SE CRPR: 1B.1	Vernal pools; freshwater wetlands, coast sage scrub, chaparral, valley grassland, and wetland riparian. Elevation 165-2,920 feet. Blooming period: April-June	No	Project location is outside of elevation range.
La Purisima viguiera *Aldama purisimae*	USFWS: None CDFW: None CRPR: 2B.3	Coastal bluff scrub and chaparral. Elevation: 1,197–1,394 feet. Blooming period: April–September	No	Project location is outside of elevation range.
Yucaipa onion *Allium marvinii*	USFWS: None CDFW: None CRPR: 1B.2	Openings in chaparral in clay soils. Elevation: 2,493–3,444 feet. Blooming period: April–May	No	Project location is outside of elevation range.
San Diego ambrosia *Ambrosia pumila*	USFWS: FE CDFW: None CRPR: 1B.1	Vernal pools, disturbed; freshwater wetlands, coastal sage scrub, chaparral, valley grassland. Elevation: 245-7,480 feet. Blooming period: April-October	No	Project location is outside of elevation range.
Aphanisma *Aphanisma blitoides*	USFWS: None CDFW: None CRPR: 1B.2	Sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 3–1,000 feet. Blooming period: March–June	No	Potentially suitable sandy soils within coastal bluff scrub present landward of the railroad tracks, however, nearest record is located 3 miles south of study area and dated 1937.
Rainbow manzanita *Arctostaphylos rainbowensis*	USFWS: None CDFW: None CRPR: 1B.1	Chaparral. Elevation: 672–2,198 feet. Blooming period: December–March	No	Project location is outside of elevation range.
San Diego sagewort *Artemisia palmeri*	USFWS: None CDFW: None CRPR: 4.2	Sandy soils in mesic areas in chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland. Elevation: 49–3,002 feet. Blooming period: February–September	No	Suitable soils absent.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Western spleenwort *Asplenium vespertinum*	USFWS: None CDFW: None CRPR: 4.2	Rocky areas in chaparral, cismontane woodland, and coastal scrub. Elevation: 590–3,281 feet. Blooming period: February–June	No	Project location is outside of elevation range.
Coulter's saltbush *Atriplex coulteri*	USFWS: None CDFW: None CRPR: 1B.2	Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, and grassland. Elevation: 9–1,509 feet. Blooming period: March–October	No	Suitable soils and habitat absent.
South Coast saltscale *Atriplex pacifica*	USFWS: None CDFW: None CRPR: 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Elevation: 0–459 feet. Blooming period: March–October	Yes	Suitable habitat present, however, not observed during field survey.
Parish's brittlescale *Atriplex parishii*	USFWS: None CDFW: None CRPR: 1B.1	Alkaline soils in chenopod scrub, playas, and vernal pools. Elevation: 82–6,232 feet. Blooming period: June–October	Yes	Suitable habitat is present, however, not observed during field survey.
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	USFWS: None CDFW: None CRPR: 1B.2	Alkaline conditions in coastal bluff scrub and coastal scrub. Elevation: 32–656 feet. Blooming period: April–October	Yes	Suitable habitat is present, however, not observed during field survey.
Encinitas baccharis *Baccharis vanessae*	USFWS: FT CDFW: SE CRPR: 1B.1	Sandstone in Maritime chaparral and Cismontane woodland. Elevation: 196–2,362 feet. Blooming period: August–November	No	Project location is outside of elevation range.
San Diego County viguiera *Bahiopsis laciniata*	USFWS: None CDFW: None CRPR: 4.3	Coastal sage scrub and chaparral. Elevation: 245-7480 feet. Blooming period: February-June	No	Project location is outside of elevation range.
Thread-leaved brodiaea *Brodiaea filifolia*	USFWS: FT CDFW: SE CRPR: 1B.1	Mesic or clay soils in chaparral, cismontane woodland, closed-cone coniferous forest, coastal scrub, meadows and seeps, grassland, and vernal pools. Elevation: 82–3,673 feet. Blooming period: March–June	No	Suitable clay substrates are absent.
Orcutt's brodiaea *Brodiaea orcutti*	USFWS: None CDFW: None CRPR: 1B.1	Found on mesic, clay, sometimes serpentinite soils in closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, grassland, and vernal pools. Elevation: 98–5,550 feet. Blooming period: May–July	No	Project location is outside of elevation range.
Santa Rosa Basalt brodiaea *Brodiaea santarosae*	USFWS: None CDFW: None CRPR: 1B.2	Basaltic grassland. Elevation: 1,902–3,427 feet. Blooming period: May–June	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Catalina mariposa lily *Calochortus catalinae*	USFWS: None CDFW: None CRPR: 4.2	Coastal sage scrub, foothill woodland, chaparral, and valley grassland. Elevation: 0-6265 feet. Blooming period: March-June	No	Suitable habitat is absent.
Intermediate mariposa lily *Calochortus weedii* var. *intermedius*	USFWS: None CDFW: None CRPR: 1B.2	Rocky and calcareous areas in chaparral, coastal scrub, and grassland. Elevation: 345–2,804 feet. Blooming period: May–July	No	Project location is outside of elevation range.
Payson's jewel-flower *Caulanthus simulans*	USFWS: None CDFW: None CRPR: 4.2	Sandy and granitic soils in chaparral and coastal scrub. Elevation: 295–7,218 feet. Blooming period: February–June	No	Project location is outside of elevation range.
Pendleton ceanothus *Ceanothus pendletonensis*	USFWS: None CDFW: None CRPR: 1B.2	Granitic soils in chaparral and cismontane woodland. Elevation: 360–2,850 feet. Blooming period: March–June	No	Project location is outside of elevation range.
Southern tarplant *Centromadia parryi ssp. australis*	USFWS: None CDFW: None CRPR: 1B.1	Found within the margin of marshes and swamps, vernally mesic soils in grassland, and vernal pools. Elevation: 0–1,574 feet. Blooming period: May–November	No	Suitable habitat is absent.
Smooth tarplant *Centromadia pungens ssp. laevis*	USFWS: None CDFW: None CRPR: 1B.1	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, and grassland. Elevation: 0-100 feet. Blooming period: April–September	No	Suitable habitat is absent.
Orcutt's pincushion *Chaenactis glabriuscula var. orcuttiana*	USFWS: None CDFW: None CRPR: 1B.1	Sandy soils in coastal bluff scrub and coastal dunes. Elevation: 0–328 feet. Blooming period: January–August	Yes	Suitable habitat is present, however, not observed during field survey.
Southern mountain misery *Chamaebatia australis*	USFWS: None CDFW: None CRPR: 4.2	Gabbroic or metavolcanic chaparral. Elevation: 984–3,345 feet. Blooming period: November–May	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Peninsular spineflower *Chorizanthe leptotheca*	USFWS: None CDFW: None CRPR: 4.2	Alluvial fans or granitic areas in chaparral, coastal scrub, and lower montane coniferous forest. Elevation: 984–6,232 feet. Blooming period: May–August	No	Project location is outside of elevation range.
Long-spined spineflower *Chorizanthe polygonoides var. longispina*	USFWS: None CDFW: None CRPR: 1B.2	Clay lenses, largely devoid of shrubs in chaparral, coastal scrub, meadows and seeps, grassland, and vernal pools. Elevation: 98–5,018 feet. Blooming period: April–July	No	Project location is outside of elevation range.
Seaside cistanthe *Cistanthe maritima*	USFWS: None CDFW: None CRPR: 4.2	Sandy soils in coastal bluff scrub, coastal scrub, and grassland. Elevation: 16–984 feet. Blooming period: February–August	Yes	Suitable vegetation is present, however, not observed during field survey.
San Miguel savory *Clinopodium chandleri*	USFWS: None CDFW: None CRPR: 1B.2	Rocky gabbroic, or metavolcanic areas in chaparral, cismontane woodland, coastal scrub, riparian scrub, and grassland. Elevation: 393–3,526 feet. Blooming period: March–July (synonym of Satureja chandleri)	No	Project location is outside of elevation range.
Serpentine collomia *Collomia diversifolia*	USFWS: None CDFW: None CRPR: 4.3	Serpentine, rocky, and gravelly soils in chaparral and cismontane woodland. Elevation: 655–1,970 feet. Blooming period: May–June	No	Project location is outside of elevation range.
Summer holly *Comarostaphylis diversifolia ssp. diversifolia*	USFWS: None CDFW: None CRPR: 1B.2	Chaparral and Cismontane woodland. Elevation: 98–2,591 feet. Blooming period: April–June	No	Project location is outside of elevation range.
Small-flowered morning-glory *Convolvulus simulans*	USFWS: None CDFW: None CRPR: 4.2	Friable clay soils or serpentine seeps in chaparral openings, coastal scrub, and grassland. Elevation: 98–2,297 feet. Blooming period: March–July	No	Project location is outside of elevation range.
Paniculate tarplant *Deinandra paniculate*	USFWS: None CDFW: None CRPR: 4.2	Usually found in vernally mesic soils in coastal scrub, grassland, and vernal pools. Elevation: 82–3,084 feet. Blooming period: April–November	No	Project location is outside of elevation range.
Western dichondra *Dichondra occidentalis*	USFWS: None CDFW: None CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, grassland. Elevation: 164–1,640 feet. Blooming period: January–July	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Blochman's dudleya *Dudleya blochmaniae ssp. blochmaniae*	USFWS: None CDFW: None CRPR: 1B.1	Rocky, often clay or serpentine soils in coastal bluff scrub, chaparral, coastal scrub, and grassland. Elevation: 16–1,476 feet. Blooming period: April–June	No	Suitable soils absent.
Many-stemmed dudleya *Dudleya multicaulis*	USFWS: None CDFW: None CRPR: 1B.2	Often in clay soils in chaparral, coastal scrub, and grassland. Elevation: 49–2,591 feet. Blooming period: April–July	No	Suitable soils absent.
Laguna Beach dudleya *Dudleya stolonifera*	USFWS: FT CDFW: ST CRPR: 1B.1	Rocky soil in chaparral, coastal scrub, cismontane woodland, and grassland. Elevation: 32–853 feet. Blooming period: May–July	No	Suitable soils absent.
Sticky dudleya *Dudleya viscida*	USFWS: None CDFW: None CRPR: 1B.2	Rocky soils in coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub. Elevation: 32–1,804 feet. Blooming period: May–June	No	Suitable soils absent.
San Diego button-celery *Eryngium aristulatum var. parishii*	USFWS: FE CDFW: SE CRPR: 1B.1	Vernal pools; freshwater wetlands, coastal sage scrub, valley grassland, and wetland-riparian. Elevation: 230-2065 feet. Blooming period: April-June	No	Project location is outside of elevation range.
Pendleton button-celery *Eryngium pendletonense*	USFWS: None CDFW: None CRPR: 1B.1	Clay soils or vernally mesic areas in coastal bluff scrub, grassland, and vernal pools. Elevation: 49–360 feet. Blooming period: April–July	No	Vernally mesic areas absent.
Sand-loving wallflower *Erysimum ammophilum*	USFWS: None CDFW: None CRPR: 1B.2	Sandy, openings in Maritime chaparral, coastal dunes, coastal scrub. Elevation: 0–197 feet. Blooming period: February–June	No	Suitable habitat is absent.
Palomar monkeyflower *Erythranthe diffusa*	USFWS: None CDFW: None CRPR: 4.3	Yellow pine forest and chaparral. Elevation: 1740-7515 feet. Blooming period: April June	No	Project location is outside of elevation range.
Cliff spurge *Euphorbia misera*	USFWS: None CDFW: None CRPR: 2B.2	Rocky areas in coastal bluff scrub, coastal scrub, and Mojavean desert scrub. Elevation: 32–1,640 feet. Blooming period: December–October	No	Suitable soil substrate is absent.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
San Diego barrel cactus *Ferocactus viridescens*	USFWS: None CDFW: None CRPR: 2B.1	Sandy to rocky areas of chaparral, coastal scrub, grassland, and vernal pools. Elevation: 9–1,476 feet. Blooming period: May–June	No	Suitable habitat is absent.
Palmer's grapplinghook *Harpagonella palmeri*	USFWS: None CDFW: None CRPR: 4.2	Clay soils in chaparral, grassland, coastal sage scrub. Elevation: 65–3,132 feet. Blooming period: March–May	No	Project location is outside of elevation range.
Graceful tarplant *Holocarpha virgata ssp. elongata*	USFWS: None CDFW: None CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, and grassland. Elevation: 196–3,600 feet. Blooming period: May–November	No	Project location is outside of elevation range.
Vernal barley *Hordeum intercedens*	USFWS: None CDFW: None CRPR: 3.2	Coastal dunes, coastal scrub, saline flats and depressions in grassland, and vernal pools. Elevation: 16–3,280 feet. Blooming period: March–June	No	Suitable habitat is absent.
Mesa horkelia *Horkelia cuneata var. puberla*	USFWS: None CDFW: None CRPR: 1B.1	Sandy and gravelly soils within Maritime chaparral, cismontane woodland, and coastal scrub. Elevation: 229–2,657 feet. Blooming period: February–July (September)	No	Project location is outside of elevation range.
Ramona horkelia *Horkelia truncata*	USFWS: None CDFW: None CRPR: 1B.3	Clay and gabbroic soils in chaparral and Cismontane woodland. Elevation: 1,312–4,265 feet. Blooming period: May–June	No	Project location is outside of elevation range.
California satintail *Imperata brevifolia*	USFWS: None CDFW: None CRPR: 2B.1	Mesic soils in chaparral, coastal scrub, Mojavean desert scrub, riparian scrub, meadows and seeps (often alkali). Elevation: 0–3,985 feet. Blooming period: September–May	No	Suitable soils absent.
Decumbent goldenbush *Isocoma menziesii var. decumbens*	USFWS: None CDFW: None CRPR: 1B.2	Chaparral and in sandy coastal scrub, often in sandy disturbed areas. Elevation: 33–443 feet. Blooming period: April–November	Yes	Suitable habitat and soils are present, however, not observed during field survey
Southern California black walnut *Juglans californica*	USFWS: None CDFW: None CRPR: 4.2	Alluvial areas in chaparral, cismontane woodland, and coastal scrub. Elevation: 164–2,952 feet. Blooming period: March–August	No	Project location is outside of elevation range.
Southwestern spiny rush *Juncus acutus ssp. leopoldii*	USFWS: None CDFW: None CRPR: 4.2	Mesic soils in coastal dunes, alkaline seeps in meadows and seeps, and coastal salt marshes and swamps. Elevation: 9–2,953 feet. Blooming period: (March)May–June	No	Suitable habitat is absent

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	USFWS: None CDFW: None CRPR: 1B.1	Coastal salt marsh, coastal salt swamps, playas, vernal pools. Elevation: 3–4,001 feet. Blooming period: February–June	No	Suitable habitat is absent
Robinson's pepper-grass *Lepidium virginicum var. robinsonii*	USFWS: None CDFW: None CRPR: 4.3	Openings in chaparral and sage scrub. Elevation: below 2,900 feet. Blooming period: January–July	No	Suitable habitat is absent.
Sea dahlia *Leptosyne maritima*	USFWS: None CDFW: None CRPR: 2B.2	Coastal bluff scrub and coastal scrub. Elevation: 16–492 feet. Blooming period: March–May	No	Suitable habitat present, however, not observed during field survey and nearest record is over 10 miles south of study area.
Woolly-headed lessingia *Lessingia hololeuca*	USFWS: None CDFW: None CRPR: 3	Clay or serpentine soils in grassland, coastal scrub, lower montane coniferous and broadleafed upland forests. Elevation: 45–1,000 feet. Blooming period: June–October	No	Suitable soils absent.
Ocellated Humboldt lily *Lilium humboldtii ssp. ocellatum*	USFWS: None CDFW: None CRPR: 4.2	Openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland. Elevation: 98–5,904 feet. Blooming period: March–August	No	Project location is outside of elevation range.
Lemon lily *Lilium parryi*	USFWS: None CDFW: None CRPR: 1B.2	Mesic areas in upper and lower montane coniferous forest, meadows and seeps, and riparian forest. Elevation: 4,001–9,003 feet. Blooming period: July	No	Project location is outside of elevation range.
Santa Catalina Island desert-thorn *Lycium brevipes var. hassei*	USFWS: None CDFW: None CRPR: 3.1	Coastal bluff scrub and coastal scrub. Elevation: 213–984 feet. Blooming period: June–August	No	Project location is outside of elevation range.
California box-thorn *Lycium californicum*	USFWS: None CDFW: None CRPR: 4.2	Coastal bluff scrub and coastal scrub. Elevation: 16–492 feet. Blooming period: December–August	Yes	Suitable habitat present, however, not observed during field survey.
Cliff malacothrix *Malacothrix saxatilis var. saxatilis*	USFWS: None CDFW: None CRPR: 4.2	Coastal scrub and coastal bluff scrub. Elevation: 9–656 feet. Blooming period: March–September	Yes	Suitable habitat present, however, not observed during field survey.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Small-flowered microseris *Microseris douglasii ssp.platycarpha*	USFWS: None CDFW: None CRPR: 4.2	Clay soils in cismontane woodland, coastal scrub, grassland, and vernal pools. Elevation: 49–3,510 feet. Blooming period: March–May	No	Suitable soils absent.
Intermediate monardella *Monardella hypoleuca ssp. intermedia*	USFWS: None CDFW: None CRPR: 1B.3	Usually in the understory in chaparral, cismontane woodland, and sometimes in lower montane coniferous forest. Elevation: 1,312–4,100 feet. Blooming period: April–September	No	Project location is outside of elevation range.
Hall's monardella *Monardella macrantha ssp. hallii*	USFWS: None CDFW: None CRPR: 1B.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, grassland. Elevation: 2,394–7,199 feet. Blooming period: June–October	No	Project location is outside of elevation range.
Little mousetail *Myosurus minimus ssp. apus*	USFWS: None CDFW: None CRPR: 3.1	Grassland and alkaline vernal pools. Elevation: 65–2,100 feet. Blooming period: March–June	No	Project location is outside of elevation range.
Mud nama *Nama stenocarpa*	USFWS: None CDFW: None CRPR: 2B.2	Marshes and swamps, also riverbanks and lake margins. Elevation: 16–1,640 feet. Blooming period: January–July	No	Suitable habitat is absent
Spreading navarretia *Navarretia fossalis*	USFWS: FT CDFW: None CRPR: 1B.1	Chenopod scrub, assorted freshwater marshes and swamps, playas, and vernal pools. Elevation: 98–2,149 feet. Blooming period: April–June	No	Project location is outside of elevation range.
Prostrate vernal pool navarretia *Navarretia prostrata*	USFWS: None CDFW: None CRPR: 1B.2	Mesic coastal scrub, meadows and seeps, alkaline grassland, and vernal pools. Elevation: 49–3,968 feet. Blooming period: April–July	No	Suitable habitat is absent.
Coast woolly-heads *Nemacaulis denudate var. denudata*	USFWS: None CDFW: None CRPR: 1B.2	Coastal dunes. Elevation: 0–328 feet. Blooming period: April–September	No	Coastal dunes absent.
Chaparral nolina *Nolina cismontana*	USFWS: None CDFW: None CRPR: 1B.2	Sandstone and gabbro soils in chaparral, and coastal scrub. Elevation: 459–4,183 feet. Blooming period: May–July	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
California Orcutt grass *Ocruttia californica*	USFWS: FE CDFW: SE CRPR: 1B.1	Vernal pools. Elevation: 49–2,165 feet. Blooming period: April–August	No	Potentially suitable isolated road ruts present, however, no vegetation was observed within road ruts.
Allen's pentachaeta *Pentachaeta aurea ssp. allenii*	USFWS: None CDFW: None CRPR: 1B.1	Openings of coastal scrub and grassland. Elevation: 246–1,706 feet. Blooming period: March–June	No	Project location is outside of elevation range.
Golden-rayed pentachaeta *Pentachaeta aurea ssp. aurea*	USFWS: None CDFW: None CRPR: 4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, and grassland. Elevation: 262–6,068 feet. Blooming period: March–July	No	Project location is outside of elevation range.
South coast branching phacelia *Phacelia ramosissima var. austrolitoralis*	USFWS: None CDFW: None CRPR: 3.2	Sandy and rocky soils in chaparral, coastal dunes, coastal scrub, coastal salt marshes and swamps. Elevation: 16–984 feet. Blooming period: March–August	Yes	Suitable habitat is present, however, not observed during field surveys.
Chaparral rein orchid *Piperia cooperi*	USFWS: None CDFW: None CRPR: 4.2	Chaparral, cismontane woodland, and grassland. Elevation: 49–5,200 feet. Blooming period: March–June	No	Suitable habitat is absent
White rabbit-tobacco *Pseudognaphalium leucocephalum*	USFWS: None CDFW: None CRPR: 2B.2	Sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland. Elevation: 0–6,888 feet. Blooming period: July–December	Yes	Suitable habitat is present, however, not observed during field surveys.
Nuttall's scrub oak *Quercus dumosa*	USFWS: None CDFW: None CRPR: 1B.1	Sandy or clay loam in closed-cone coniferous forest, chaparral, and coastal scrub. Elevation: 49–1,312 feet. Blooming period: February–August	No	Suitable vegetation is present however not observed during field survey.
Engelmann oak *Quercus engelmannii*	USFWS: None CDFW: None CRPR: 4.2	Cismontane woodland, chaparral, riparian woodland, and grassland. Elevation: 164–4,265 feet. Blooming period: March–June	No	Project location is outside of elevation range.
Fish's milkwort *Rhinotropis cornuta var. fishiae*	USFWS: None CDFW: None CRPR: 4.3	Chaparral, cismontane woodland, and riparian woodland. Elevation: 328–3280 feet. Blooming period: May–August	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
Coulter's matilija poppy *Romneya coulteri*	USFWS: None CDFW: None CRPR: 4.2	Chaparral and coastal scrub, often in burned areas. Elevation: 65–3,936 feet. Blooming period: March–July	No	Project location is outside of elevation range.
Caraway-leaved woodland-gilia *Saltugilia caruifolia*	USFWS: None CDFW: None CRPR: 4.3	Sandy openings in chaparral and lower montane coniferous forest. Elevation: 2,755–7,544 feet. Blooming period: May–August	No	Project location is outside of elevation range.
Southern mountains skullcap *Scutellaria bolanderi ssp. austromontana*	USFWS: None CDFW: None CRPR: 1B.2	Moist embankments of montane creeks, mesic chaparral, mesic Cismontane woodland, and mesic lower montane coniferous forest. Elevation: 1,394–6,562 feet. Blooming period: June–August	No	Project location is outside of elevation range.
Ashy spike-moss *Selaginella cinerascens*	USFWS: None CDFW: None CRPR: 4.3	Chaparral and coastal sage scrub. Elevation: 65–2,099 feet. Sporophyte period: Variable	Yes	Suitable habitat present, however, not observed during surveys and study area.
Chaparral ragwort *Senecio aphanactis*	USFWS: None CDFW: None CRPR: 2B.2	Chaparral, cismontane woodland, coastal scrub, and alkaline flats. Elevation: 49–2,624 feet. Blooming period: January–April	Yes	Suitable habitat present, however, not observed during surveys and study area.
Salt spring checkerbloom *Sidalcea neomexicana*	USFWS: None CDFW: None CRPR: 2B.2	Alkaline and mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Elevation: 49–5,020 feet. Blooming period: March–June	No	Suitable soils absent.
Estuary seablite *Suaeda esteroa*	USFWS: None CDFW: None CRPR: 1B.2	Salt marsh, coastal; coastal salt marsh and wetland-riparian. Elevation: 0-15 feet. Blooming period: May-October	No	Suitable habitat is absent.
Woolly seablite *Suaeda taxifolia*	USFWS: None CDFW: None CRPR: 4.2	Coastal bluff scrub, coastal dunes, and the margins of coastal salt marshes and swamps. Elevation: 0–164 feet. Blooming period: January–December	Yes	Suitable habitat present, however, not observed during surveys and study area.
Parry's tetracoccus *Tetracoccus dioicus*	USFWS: None CDFW: None CRPR: 1B.2	Chaparral and coastal sage scrub. Elevation: 541–3,280 feet. Blooming period: April–May	No	Project location is outside of elevation range.

Scientific Name	Listing	Habitat Characteristics	Potential	Rationale
California screw moss *Tortula californica*	USFWS: None CDFW: None CRPR: 1B.2	Sandy soils, chenopod scrub, valley and foothill grasslands. Elevation: 30-5340 feet.	No	Suitable habitat is absent
Big-leaved crownbeard *Verbesina dissita*	USFWS: FT CDFW: ST CRPR: 1B.1	Maritime chaparral and coastal scrub. Elevation: 147–672 feet. Blooming period: April–July	No	Project location is outside of elevation range.

Sensitivity Status

United States Fish and Wildlife Service (USFWS): FC=Federal Candidate for Listing; FE=Federally Listed Endangered; FT=Federally Listed Threatened

California Department of Fish and Wildlife (CDFW): SE=State Listed Endangered

California Rare Plant Ranking (CPRP):

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

The plants of Rank 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2B: Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act; however, they are eligible for consideration under the California Endangered Species Act. This rank is meant to highlight the importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in California; the only difference is the status of the plants outside of the state.

3: Need more information

4: Limited Distribution (Watch List)

Threat Ranks:

The CRPR use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. Most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations in California

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Invertebrates					
Crotch bumble bee *Bombus crotchii*	USFWS: None CDFW: CE	Found between San Diego and Redding in a variety of habitats including open grasslands, shrublands, chaparral, desert margins including Joshua tree and creosote scrub, and semi-urban settings. It is near endemic to California, with only a few records from Nevada and Mexico (CDFW 2022). Williams et al. (2014) report plants in the genera *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* as example food plants.	CDFW. 2022. News Room – Recent News Releases. *CDFW Seeks Public Comment Related To Crotch's Bumble Bee, Franklin's Bumble Bee, Suckley's Cuckoo Bumble Bee And Western Bumble Bee*. December 14, 2022. https://wildlife.ca.gov/News/cdfw-seeks-public-comment-related-to-crotchs-bumble-bee-franklins-bumble-bee-suckleys-cuckoo-bumble-bee-and-western-bumble-bee. Williams PH, Thorp RW, Richardson LL, Colla SR. 2014. Bumble Bees of North America: An Identification Guide: An Identification Guide. Princeton University Press.	Yes	Potentially suitable habitat is present along vegetated coastal bluffs.
San Diego fairy shrimp *Branchinecta sandiegonensis*	USFWS: FE CDFW: None	Vernal pool complexes primarily near the coast in Orange and San Diego Counties, but currently known from as far north as Long Beach and south to northwestern Baja California. Restricted to dilute vernal pools, having relatively low sodium concentrations (below 60 milli-moles per liter), low alkalinity (below 1000 milligrams per liter), and neutral pH (USFWS 2008).	USFWS. 2008. San Diego Fairy Shrimp (Branchinecta sandiegonensis) 5-Year Review: Summary and Evaluation. USFWS; Carlsbad, CA.	Yes	Potentially suitable isolated road ruts are present.
Monarch (California overwintering population) *Danaus plexippus pop. 1*	USFWS: FC CDFW: None	Typically overwinter in groves of eucalyptus (Eucalyptus sp.), Monterey pine (Pinus radiata), or Monterey	IELP. 2012. The Legal Status of Monarch Butterflies in California.	No	Suitable habitat absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
		cypress (Hesperocyparis macrocarpa) along the California coast (IELP 2012).	International Environmental Law Project; Portland, OR.		
Riverside fairy shrimp *Streptocephalus woottoni*	USFWS: FE CDFW: None	Restricted to vernal pools and non-vegetated ephemeral pools deeper than 12 inches. Inland areas of Riverside, Orange, and San Diego counties. Coastal areas of San Diego County and northwestern Baja California (USFWS 2008).	USFWS. 2008. Riverside Fairy Shrimp (Streptocephalus woottoni) 5-year Review: Summary and Evaluation. USFWS; Carlsbad, CA.	No	Present isolated road ruts are too shallow for this species.
Fish					
Tidewater goby *Eucyclogobius newberryi*	USFWS: FE CDFW: None	Shallow coastal lagoons and the uppermost brackish zone of larger estuaries. Rarely found in marine or freshwater environments. Typically associated with still water, less than 1 meter deep, with salinites of less than 12 parts per thousand (USFWS 2007).	USFWS. 2007. Tidewater Goby (Eucyclogobius newberryi) 5-Year Review: Summary and Evaluation. USFWS; Ventura, CA.	No	No lagoons or brackish estuaries present.
Arroyo chub *Gila orcuttii*	USFWS: None CDFW: SSC	Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa margarita Rivers, as well as malibu and San Juan Creeks. Has been extirpated from much of the native range but introduced to streams along the coast and the mojave River system, where they have eliminated the mohave tui chub (UC Davis 2013). Southern coastal streams in habitats characterized by slow-moving water, mud or sand substrate, and depths greater than 40 cm. Have also been found in pool habitats with gravel, cobble and boulder substrates. Adapted to survive in low oxygen waters and wide temperature fluctuations (moyle et al 2015).	Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. Fish Species of Special Concern in California. Sacramento: California Department of Fish and Wildlife. www.wildlife.ca.gov	No	No streams or rivers present.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Steelhead (southern California DPS) *Oncorhynchus mykiss irideus*	USFWS: FE CDFW: CE	Counties in range = San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego. Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (NMFS 2016).	National Marine Fisheries Service. 2016. 5-Year Review: Summary and Evaluation of Southern California Coast Steelhead Distinct Population Segment. National Marine Fisheries Service. West Coast Region. California Coastal Office. Long Beach, California.	No	No streams or rivers present. Marine waters are present outside of expected Project disturbance.
Amphibians					
Arroyo toad *Anaxyrus californicus*	USFWS: FE CDFW: SSC	Breeding habitat = slow moving streams with shallow pools, nearby sandbars and adjacent stream terraces. Oft.en breed in shallow, sandy pools bordered by sand/gravel flood terraces. Inhabit upland habitats when not breeding, such as sycamore-cottonwood woodlands, oak woodlands, coastal sage scrub, chaparral and grassland (USFWS 2009).	USFWS. 2009. Arroyo Toad (Bufo californicus (=microscaphus)) 5-Year Review: Summary and Evaluation. USFWS; Ventura, CA.	No	No slow-moving streams or shallow pools present.
Western spadefoot *Spea hammondii*	USFWS: FPT CDFW: SSC	Endemic to California and northern Baja California ranging from Redding throughout the central valley and associated foothills, through the South Coast Ranges into southern California west of the Peninsular mountains. Breeding sites include vernal pools, temporary rain pools, cattle tanks, and occasionally pools of intermittent streams typically in turbid water with little to no cover that remain wet for at least 30 days to allow for transfomation of larvae (Nafis 2023). Prefers open areas with sandy or gravely soils, in a variety of habitats including grasslands, oak woodlands, coastal sage scrub, chaparral, sandy washes, floodplains, alluvial fans,	Nafis, Gary. 2023. California Herps: A Guide to Reptiles and Amphibians of California. Available online: http://www.californiaherps.com/ Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Suitable habitat is absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
		playas, and alkali flats. Pools with invasive species, such as crayfish (*Pacifasticus* spp.), or bullfrogs (*Lithobates catesbeianus*) often, but not always, exclude this species (Thomson et al. 2016).			
Coast Range newt *Taricha torosa*	USFWS: None CDFW: SSC	Ranges along the coast from Monterey to Ventura County and Los Angeles to San Diego County with some occurrences in south western Riverside County. The population north of Ventura generally occurs in mesic forests on hilly or mountainous terrain. Populations around and south of Ventura generally occur in drier oak, chaparral, and grassland habitats. Specifically, the southern population use permanent streams for breeding, and occasionally seasonal streams free of non-native fish (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Mesic forests and mountains are absent.
Reptiles					
Southwestern pond turtle *Actinemys pallida*	USFWS: FPT CDFW: SSC	Ranges throughout California except for Inyo and Mono Counties. Generally occurs in various water bodies including permanent and ephemeral systems either natural or artificial. Upland habitat that is at least moderately undisturbed is required for nesting and overwintering, in soils that are loose enough for excavation (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Suitable habitat is absent and Project study area is highly disturbed due to railroad and pedestrian trails.
Southern California legless lizard *Anniella stebbinsi*	USFWS: None CDFW: SSC	Little is known about this species. Information is based on Anniella pulchra before it was split into five species. Current known range is cismontane southern California and the Mojave Desert portion of Kern County (CDFW 2019). Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodland, desert scrub, sandy washes, and	Papenfuss, T.J., and J.F. Parham. 2013. Four New Species of California Legless Lizards (Anniella). Breviora. 10.3099/mCZ10.1. AND California Department of Fish and Wildlife (CDFW). 2019. California Natural Diversity Database.	Yes	Potentially suitable habitat present but highly disturbed

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
		stream terraces (Nafis 2017). Originally known to occur throughout Southern California south of the Transverse Ranges into northern Baja California, Mexico (Papenfuss and Parham, 2013).	Rarefind 5. All Records of Oc		
California glossy snake *Arizona elegans occidentalis*	USFWS: None CDFW: SSC	Ranges in the cismontane portion of southern California, the southern portion of the central coast ranges, and in isolated pockets up to the Alameda and San Joaquin County border. Generally found in open desert, grasslands, shrublands, chaparral, and woodlands. Some evidence of open and sandy habitat preference exists, but specific habitat requirements for this species aren't known (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Suitable vegetation communities are absent.
Coastal whiptail *Aspidoscelis tigris stejnegeri*	USFWS: None CDFW: SSC	Ranges in cismontane southern California. Generally found in a wide range of habitats including coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas. Specifically, this species prefers sand or gravel bottomed habitats with decent shrub cover and is not often found near development (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Area too disturbed for suitability.
San Diego banded gecko *Coleonyx variegatus abbotti*	USFWS: None CDFW: SSC	Ranges in central San Diego, western Riverside, and southwestern San Bernardino Counties. Generally found in rocky coastal sage and chaparral habitat between 500 feet and 2,950 feet in elevation. Specifically, this species prefers areas of granite outcrops and dry rocky riverbeds, and in particular large cap rocks. It is not often found under small rock flakes and completely avoids areas with high intensity artificial night lighting (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Project location outside of elevation range.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Red-diamond rattlesnake *Crotalus ruber*	USFWS: None CDFW: SSC	Ranges in San Diego and Orange Counties and western Riverside and south western San Bernardino Counties. Generally found in dense chaparral and rocky outcrops. Specifically inhabits coastal sage scrub, chamise and red shank chaparral, desert slope scrub and washes, grassy fields, orchards, cactus scrub, and rocky areas. Tends to avoid developed areas (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Area too disturbed for suitability.
Western pond turtle *Emys marmorata*	USFWS: None CDFW: SSC	Ranges throughout California except for Inyo and Mono Counties. Generally occurs in various water bodies including permanent and ephemeral systems either natural or artificial. Upland habitat that is at least moderately undisturbed is required for nesting and overwintering, in soils that are loose enough for excavation (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Suitable freshwater habitat absent.
Blainville's horned lizard *Phrynosoma blainvillii*	USFWS: None CDFW: SSC	Ranges in the southern half of California outside of the desert and along the foothills of the Sierra Nevada Mountains to Butte County and along the central coast ranges up to Contra Costa County. Generally, occurs in sage scrub, dunes, alluvial scrub, annual grassland, chaparral, oak, riparian, and Joshua tree woodland, coniferous forest, and saltbush scrub. Needs loose, fine soils for burrowing, open areas for basking, and dense foliage for cover. Negatively associated with Argentine ants (*Linepithema humi*) (Thomson et al. 2016)	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	Yes	Potentially suitable habitat present but highly disturbed

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Two-striped gartersnake *Thamnophis hammondii*	USFWS: None CDFW: SSC	Ranges in cismontane Southern California with some occurrences in Monterey and San Luis Obispo Counties and southern San Benito County. Generally found in or near permanent and intermittent freshwater streams, creeks, and pools, as well as stock ponds and other artificial aquatic habitats bordered by dense vegetation. Associated habitat include willow, oak woodlands, chaparral, brushland and coniferous forest from sea level to 8,000 feet elevation (Thomson et al. 2016).	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.	No	Suitable aquatic habitat with dense vegetation absent.
Birds					
Tricolored blackbird *Agelaius tricolor*	USFWS: None CDFW: ST, SSC	Preferred nesting habitat includes cattails (Typha spp.), bulrushes (Typha spp.), Himalayan blackberry (Rubus armeniacus), and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 10 or more meters wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (Hamilton 2004). Mostly a year-round resident in California. Common locally throughout Central Valley and in coastal districts from Sonoma County south. Breeds locally in northeastern California. In winter, becomes more widespread along central coast and San Francisco Bay area, and can be found in portions of the Colorado Desert (CDFW 2019).	Hamilton, W. J. 2004. Tricolored Blackbird (Agelaius tricolor). In The Riparian Bird Conservation Plan:a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. | CDFW. 2019. California Wildlife Habita	No	Suitable vegetation communities are absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Grasshopper sparrow *Ammodramus savannarum*	USFWS: None CDFW: SSC	Known to breed in grassland habitats throughout the northeastern and mid-Atlantic U.S., southeastern Canada, coastal and Central Valley of California, and a few other areas of Canada and northern mexico (Shuford and Gardali 2008). In the east and midwest tallgrass and mixed grass prairie prairie is prefered, whereas in the west and southwest the species typically utilizes shortgrass and semidesert grasslands. Additionally, individuals can sometimes be found in corn (*Zea mays*) and oat (*Avena sativa*) fields and avoid areas with high shurb cover (Shuford and Gardali 2008).	Ruth, J.m. 2015. Status Assessment and Conservation Plan for the Grasshopper Sparrow (Ammodramus savannarum). Version 1.0 U.S. Fish and Wildlife Service, Lakewood, Colorado. 109 pp.	No	Suitable vegetation communities are absent.
Golden eagle *Aquila chrysaetos*	UFWS: BGEPA CDFW: FP	Habitat includes rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops. Uncommon resident in hills and mountains throughout California, and an uncommon migrant and winter resident in the Central Valley and Mojave Desert (Zeiner et. al. 1988-1990).	Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and m. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.	No	Suitable mountainous terrain and rock outcrops are absent.
Long-eared owl *Asio otus*	USFWS: None CDFW: SSC	Species known to be widespread and a winter migrant of the Central Valley, the western Sierra Nevada foothills, and along the California coastline. Requires dense stands of vegetation including various grasses and brush, as well as ditches, and wetlands for resting and roosting (Zeiner et. al. 1988-1990). Species known to nest on dry ground concealed in vegetation (Zeiner et. al. 1988-1990).	Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.	No	Suitable vegetation communities and wetlands are absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Burrowing owl *Athene cunicularia*	USFWS: None CDFW: SSC	Species known to be a yearlong resident of open, dry grasslands and varying desert habitats (CWHR 1999). Nesting habitat includes open areas with mammal burrows, including rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and human disturbed lands. Soils must be friable for burrows (Bates 2006).	CWHR. 1999. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program staff, September 1999 / Bates, C. 2006. Burr	No	Suitable habitat is absent due to lack of friable burrows.
Swainson's hawk *Buteo swainsoni*	USFWS: None CDFW: ST	Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah. Forages in adjacent grasslands, agricultural fields and pastures. Breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley (CWHR 2006).	CWHR. 2006. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program staff, January 2006.	No	Riparian areas, juniper-sage flats, and oak savannah are absent.
San Diego cactus wren *Campylorhynchus brunneicapillus sandiegensis*	USFWS: None CDFW: SSC	Taxonomically intermediate between more widespread subspecies in southern U.S. and Baja California, Mexico. *C.b. sandiegensis* thought to only occur in coastal sage scrub community in southern Orange and San Diego Counties. Key habitat element is thickets of cholla or prickly-pear tall enough to support nests (Shuford 2008).	Shuford, W.D. and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation in California. Studies of Western Birds 1. Western Field Orni	No	Suitable vegetation communities are absent.
Western snowy plover *Charadrius nivosus nivosus*	USFWS: FT CDFW: SSC	Coastal populations nest on sandy or gravelly dune-backed beaches, sand spits, and on estuarine salt pans and lagoons (USFWS 2005). Inland populations nest along barren to sparsely vegetated flats and along shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural wastewater	USFWS. 2005. Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover (Charadrius alexandrinus nivosus). Federal Register Vol. 70 (188): 56969-57018 | Shuford, W.D.	Yes	Potentially suitable beach habitat is present within the Area #1 and Area #4 study areas. Beaches are frequently disturbed by humans and trains utilizing railroad.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
		ponds, and salt evaporation ponds (Shuford and Gardali 2008). Inland nesting occurs at Salton Sea, Mono Lake, and isolated sites on the shores of alkali lakes in northeastern California, the Central Valley, and southeastern deserts (CWHR 2008).	and Gardali, T., editors. 2008. California Bird Species of Special Concern | CWHR. 2008. California Wildlife Habitat Relationships (CHWR) System. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program Staff, February 2005 and August 2008.		
Northern harrier *Circus hudsoninus*	USFWS: None CDFW: SSC	Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford 2008).	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.	No	Suitable vegetation communities are absent.
Yellow rail *Coturnicops noveboracensis*	USFWS: None CDFW: SSC	Nests in sedge marshes and meadows with moist soil or shallow standing water. Winters in wet meadows and tidal marshes. Much is unknown about the abundance and distribution of this species because it is extremely secretive and difficult to detect. Has been found nesting on the Modoc Plateau and in Plumas and Lassen Counties. Very rarely detected in	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of	No	Suitable vegetation communities are absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
		migration and recorded in winter at a very few sites scattered along the coast, though seemingly regular at Tomales Bay in Marin County and Arrowhead Marsh in Alameda County (Shuford and Gardali 2008).	Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.		
White-tailed kite *Elanus leucurus*	USFWS: None CDFW: FP	Occurs in herbaceous and open stages of valley lowland habitats, usually near agricultural land. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (CWHR 2005). Typically nest in the upper third of trees that may be 10–160 ft. (33-525 m.) tall. These can be open-country trees growing in isolation, or at the edge of or within a forest (Cornell 2017).	CWHR. 2005. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program staff, July 2005. | Cornell University. 2017	No	Suitable vegetation communities are absent.
Southwestern willow flycatcher *Empidonax traillii extimus*	USFWS: FE CDFW: SE	Dense riparian forest and scrub habitats associated with rivers, swamps, wetlands, lakes and reservoirs (USFWS 2002).	USFWS. 2002. Final Recovery Plan Southwestern Willow Flycatcher (Empinodax traillii extimus). USFWS; Albuquerque, NM.	No	Suitable vegetation communities are absent.
Yellow-breasted chat *Icteria virens*	USFWS: None CDFW: SSC	Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nest in dense thicket plants such as blackberry and willow (Shuford 2008).	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western	No	Suitable vegetation communities are absent.
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	USFWS: None CDFW: SE	Coastal salt marshes. Associated with dense pickleweed, particularly Salicornia pacifica, for nesting (Zambal and Hoffman 2010).	Zambal, R. and S. m. Hoffman. 2010. A Survey of the Belding's Savannah Sparrow (Passerculus sandwichensis beldingi) in California 2010. Clapper Rail Recovery Fun; Huntington Beach, CA.	No	Suitable vegetation communities are absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Short-tailed albatross *Phoebastra (= Diomedea) albatrus*	USFWS: FE CDFW: SSC	Spends most of the year foraging over the open ocean of the North Pacific. Most of the world population nests on Torishima and the Senkaku Islands, Japan, though there have been recent breeding attempts on the Bonin Islands and Kure and Midway Atolls (USFWS 2014).	USFWS. 2014. Short-tailed Albatross (Phoebastria albatrus) 5-Year Review. Anchorage Fish and Wildlife Field Office, Anchorage, Alaska.	No	Suitable vegetation communities are absent.
Coastal California gnatcatcher *Polioptila californica californica*	USFWS: FT CDFW: SSC	Scrub dominated plant communities, strongly associated with coastal scrub, sage scrub, and coastal succulent scrub communities. Distribution ranges from southern Ventura County down through Los Angeles, Orange, Riverside, San Bernardino and San Diego counties (USFWS 2010).	USFWS. 2010. Coastal California Gnatcatcher (Polioptila californica californica) 5-year Review: Summary and Evaluation. USFWS; Carlsbad, CA.	No	Suitable vegetation communities are absent and none were observed during field survey.
Light-footed Ridgeway's rail *Rallus obsoletus levipes*	USFWS: FE CDFW: SE, FP	Coastal salt marshes, lagoons, and their maritime environs from Santa Barbara County south past San Diego into Baja California. Require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high tide (USFWS 2019).	USFWS. 2019. San Diego Bay National Wildlife Refuge, Facts About Light-footed Ridgway's Rail https://www.fws.gov/refuge/san_diego_bay/wildlife_and_habitat/Light-footed_Ridgways_Rail.html	No	Suitable maritime environments absent.
Bank swallow *Riparia riparia*	USFWS: None CDFW: ST	Riparian, lacustrine, and coastal areas with vertical banks, bluffs or cliffs with fine-textured or sandy soils, into which it digs nesting holes. Also nests in earthen banks as well as sand and gravel pits (CWHR 1999).	CWHR. 1999. California Wildlife Habitat Relationships (CHWR) System. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR Program Staff, September 1999.	No	No suitable nesting areas within Project study area.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Yellow warbler *Setophaga petechia*	USFWS: None CDFW: SSC	Usually found in riparian deciduous habitats in summer: cottonwoods (*Populus* ssp.), willows (*Salix* ssp.), alders (*Alnus* ssp.), and other small trees and shrubs typical of low, open-canopy riparian woodland. Also breeds in montane shrubbery in open coniferous forests (CWHR Program Staff 2005).	CWHR Program Staff. 2005. "Yellow Warbler," California Wildlife Habitat Relationships System Life History Accounts and Range Maps. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2109&inline=1	No	Suitable vegetation communities absent.
California least tern *Sternula antillarum browni*	USFWS: FE CDFW: SE, FP	Nest and roost in colonies on open beaches, forage over near shore ocean waters and in shallow estuaries and lagoons (USFWS 2006).	USFWS. 2006. California Least Tern 5-Year Review. USFWS; Carlsbad, CA.	No	Suitable beach habitat is present at the southern end of the study area, however, area is highly disturbed due to beachgoers and trains utilizing railroad.
Least Bell's vireo *Vireo bellii pusillus*	USFWS: FE CDFW: SE	Obligate riparian breeder. Cottonwood, willow, oak woodlands, and mule fat scrub along watercourses (USFWS 1998).	USFWS. 1998. Draft recovery plan for least Bell's vireo. U.S. Fish and Wildlife Service, Portland, Oregon	No	Suitable vegetation communities absent.
Mammals					
Pallid bat *Antrozous pallidus*	USFWS: None CDFW: SSC	Ranges across all of California except for high elevation portions of the Sierra Nevada Mountains and Del Norte, western Siskiyou, Humboldt, and northern Mendocino Counties. Generally found in a wide variety of habitats but with some preference for drier areas. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 2018).	CDFW. 2018. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	Yes	May forage over the Project area but no suitable roosting habitat present.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Dulzura pocket mouse *Chaetodipus californicus femoralis*	USFWS: None CDFW: SSC	Occurs in brushy areas but probably is attracted to grass-chaparral edge. Grazing of grassland by domestic stock eliminates cover necessary for predator avoidance. (CDFW 2019).	CDFW. 2019. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	No	Suitable vegetation communities are absent.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	USFWS: None CDFW: SSC	Ranges in San Diego, western and central Riverside, southwestern San Bernardino, and eastern Orange Counties. Generally found in sandy areas with herbaceous cover and rocks or coarse gravel in a wide mixture of vegetation communities. Specifically, this species prefers rocky and gravelly areas with a yucca overstory and desert scrub communities near or in pine-juniper woodland (CDFW 2018).	CDFW. 2018. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	No	Suitable vegetation communities and soils are absent.
Mexican long-tongued bat *Choeronycteris mxicana*	USFWS: None CDFW: SSC	Occurs in a wide variety of habitats, from arid thorn scrub to tropical deciduous forest and mixed oak-conifer forest. Preferred roosting sites include mines, caves, and rock fissures. Found primarily in moist desert canyons (Bolster 1998).	Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wild	No	Suitable vegetation communities are absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
Stephen's kangaroo rat *Dipodomys stephensi*	USFWS: FE CDFW: SCE	Often found in transition areas between grassland and coastal sage scrub habitat where perennial vegetation is covering less than 50% of the ground, including disturbed areas. Deep, friable soil is needed for burrowing. Plants commonly associated with suitable habitat are chamise (*Adenostomma fasciculatum*), buckwheat (*Eriogonum* spp.), bromes (*Bromus* spp.) and filaree (*Erodium* (spp.) (Western Riverside County MSHCP 2003).	WRC MSHCP. 2003. Riverside County Integrated Project. Western Riverside County Final MSHCP. Volume II-B. Species Accounts. Mammals. Stephens' kangaroo rat (Dipodomys stephensi). M-197 - M-220.	No	Suitable combination of perennial vegetation and friable soils absent.
Western mastiff bat *Eumops perotis californicus*	USFWS: None CDFW: SSC	Ranges throughout all of Southern California, the central coast, and the Sierra Nevada Mountain Range. Generally occurs in open, arid, or semi-arid habitats. Specifically this species roosts in rock crevices and buildings. (CDFW 2018).	CDFW. 2018. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	No	No suitable roosting habitat.
Western red bat *Lasiurus blossevillii*	USFWS: None CDFW: SSC	Ranges in the western half of California except for Del Norte and Humboldt Counties. Generally occurs in most habitats except for the desert. Roosts in trees, sometimes shrubs, and typically at the margins of habitats (CDFW 2018).	CDFW. 2018. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	Yes	Potentially suitable tree and shrub habitat, however, area is highly disturbed by railway usage and adjacent beach.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
San Diego desert woodrat *Neotoma lepida intermedia*	USFWS: None CDFW: SSC	This species prefers Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats, but is also found in a variety of other habitats. Moderate to dense canopies are preferred. Particularly abundant in rock outcrops and rocky cliffs and slopes, especially those with Joshua trees. Elevational range from sea level to 8,500 feet (CWHR 2008).	CWHR. 2008. Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updated by CWHR program staff February 2008.	No	Suitable vegetation communities absent.
Pocketed free-tailed bat *Nyctinomops femorosaccus*	USFWS: None CDFW: SSC	Associated with creosote scrub or chaparral, and large rock features such as boulder jumbles or rocky canyons (Bolster 1998). Colonial and roosts primarily in crevices of rugged cliffs, high rocky outcrops and slopes. It has been found in a variety of plant associations, including desert shrub and pine-oak forests. The species may also roost in buildings, caves, and under roof tiles (WBWG 2016).	WBWG (Western Bat Working Group). 2016. Western Bat Species Accounts. http://wbwg.org/western-bat-species/	No	Suitable vegetation communities are absent.
Big free-tailed bat *Nyctinomops macrotis*	USFWS: None CDFW: SSC	Found in rugged, rocky terrain up to 8,000 feet in elevation in New Mexico, southern Arizona, and Texas where it is probably a yearlong resident. Rare in California, and probably does not breed in the state. Many individuals wander widely in autumn, resulting in records far out of the normal range. Records of the species are from urban areas of San Diego County and vagrants found in fall and winter. A probable vagrant was collected in Alameda County but this record is suspect (CWHR Program Staff 2002).	CWHR Program Staff. 2002. "Big Free-tailed Bat," California Wildlife Habitat Relationships System Life History Accounts and Range Maps. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2355&inline=1	No	Suitable habitat is absent.
Pacific pocket mouse *Perognathus longimembris pacificus*	USFWS: FE CDFW: SSC	Historically occurred on fine, sandy soil within about 12 miles of the Pacific coast of southern California from Los Angeles County south to Mexico. Associates with open coastal scrub and grassland communities (Spencer 2005).	Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D.	No	Suitable habitat is absent.

Scientific Name	Listing	Habitat and Distribution	Citation	Potential	Rationale
			Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division.		
American badger *Taxidea taxus*	USFWS: None CDFW: SSC	Ranges in all of California except the extreme northwest corner. Generally found in drier open areas of habitats with friable soils (CDFW 2018).	CDFW. 2018. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. CDFW Biogeographic Data Branch; Sacramento, CA.	No	Suitable soils absent.

Source: California Department of Fish and Wildlife (CDFW) 2018, 2019; California Wildlife Habitat Relationships (CWHR) 1999, 2008; Nafis 2019; National Oceanic and Atmospheric Administration (NOAA) 2019; Shuford and Gardali 2008; Thompson, R. et al 2016

Notes:

Special status ranking:

FE= Federally Endangered; FT= Federally Threatened; SE= State Endangered; ST= State Threatened; SSC= CDFW Species of Special Concern; SCE= State Candidate Endangered; SCT= State Candidate Threatened; FP= Fully Protected (CDFW); BGEPA= Bald and Golden Eagle Protection Act

Attachment B. USDA NRCS Soil Report

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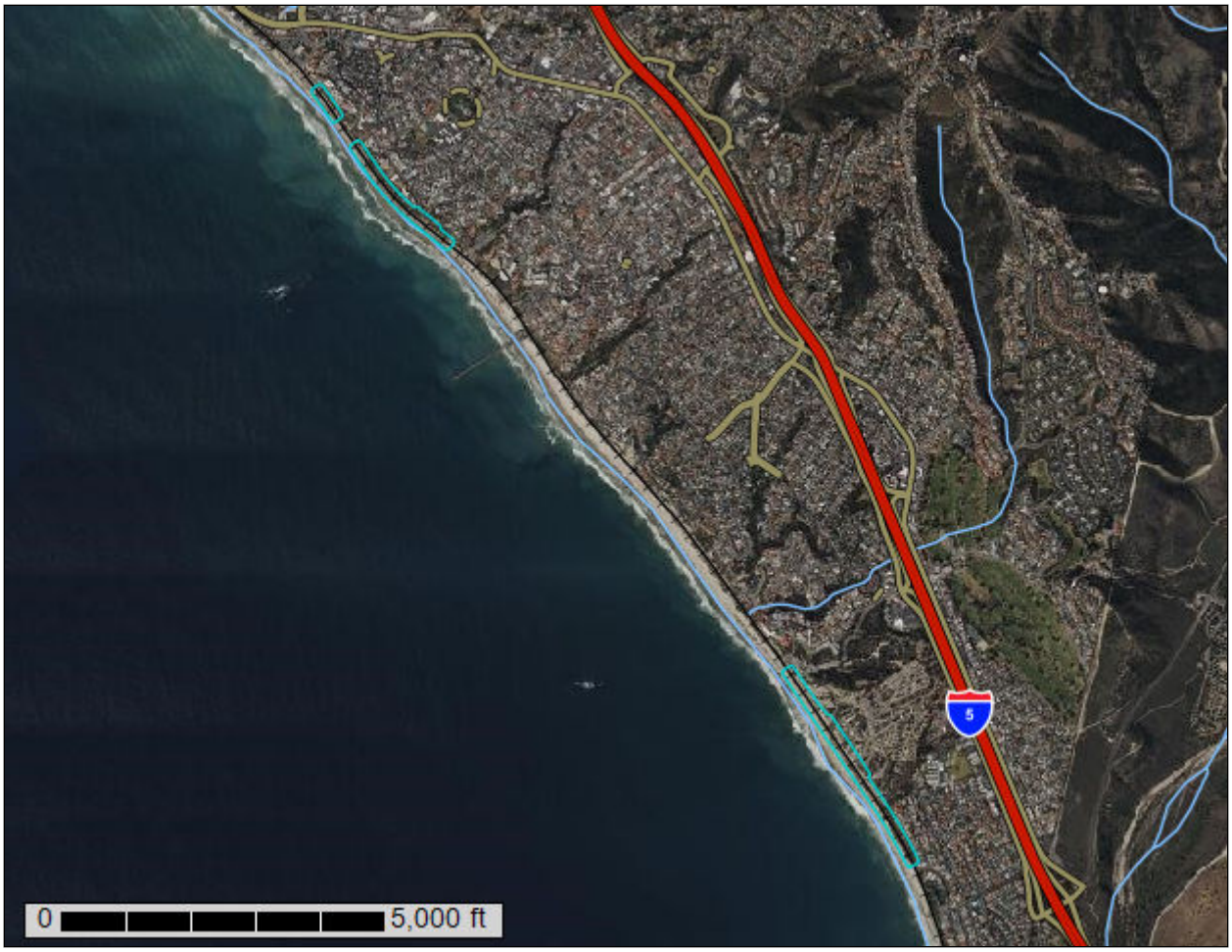
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Orange County and Part of Riverside County, California



May 14, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

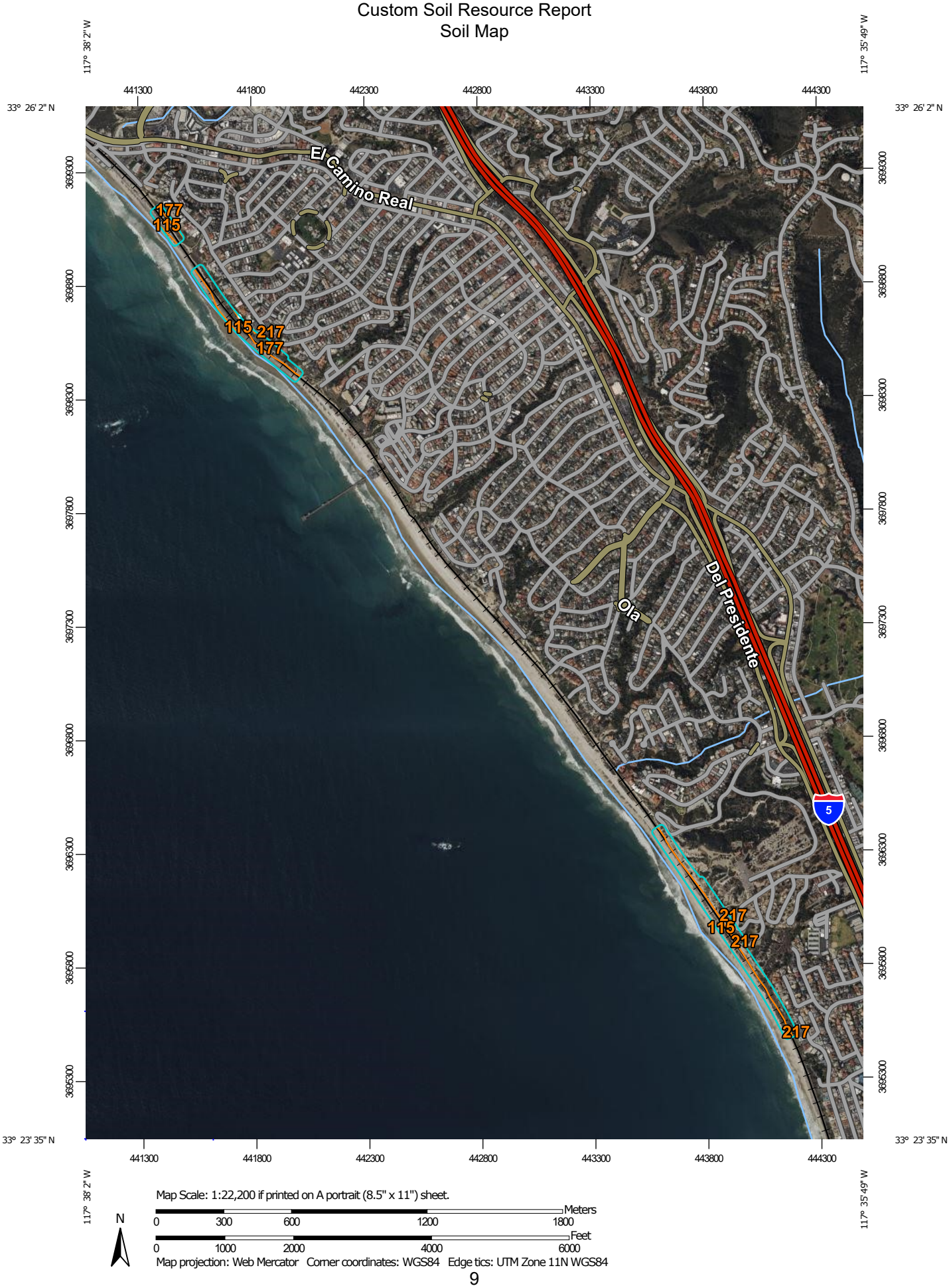
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:22,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 17, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
115	Beaches	17.6	55.6%
177	Myford sandy loam, 9 to 30 percent slopes, eroded	12.3	38.9%
217	Xeralfic arents, loamy, 2 to 9 percent slopes	0.2	0.5%
Totals for Area of Interest		**31.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Orange County and Part of Riverside County, California

115—Beaches

Map Unit Setting

National map unit symbol: hclq
Elevation: 0 to 10 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 57 degrees F
Frost-free period: 190 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Beaches: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Beaches

Setting

Landform: Beaches

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 72 inches
Frequency of flooding: Frequent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Ecological site: R019XG902CA - Beaches
Hydric soil rating: Yes

177—Myford sandy loam, 9 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcnq
Elevation: 0 to 2,100 feet
Mean annual precipitation: 11 to 18 inches
Mean annual air temperature: 62 to 65 degrees F
Frost-free period: 290 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Myford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myford

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

A - 0 to 7 inches: sandy loam
Bt - 7 to 11 inches: sandy clay
Btk - 11 to 21 inches: sandy clay loam
B't - 21 to 64 inches: sandy clay loam
C - 64 to 79 inches: sandy loam

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 4 to 10 inches to abrupt textural change
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R019XD061CA - CLAYPAN
Hydric soil rating: No

Minor Components

Myford, sandy loam

Percent of map unit: 10 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R019XD061CA - CLAYPAN
Hydric soil rating: No

Cieneba, sandy loam

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R019XD060CA - SHALLOW LOAMY
Hydric soil rating: No

Yorba, cobbly sandy loam

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R019XD061CA - CLAYPAN
Hydric soil rating: No

217—Xeralfic arents, loamy, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hcq0
Elevation: 0 to 2,500 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Xeralfic arents and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xeralfic Arents

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Sandy marine deposits

Typical profile

H1 - 0 to 60 inches: variable

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: F019XG913CA - Loamy Hills <30"ppt
Hydric soil rating: No

Minor Components

Unnamed, undisturbed

Percent of map unit: 15 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the

upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or

B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–CA678-Orange County and Part of Riverside County, California					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
115: Beaches	Beaches	100	Beaches	Yes	4
177: Myford sandy loam, 9 to 30 percent slopes, eroded	Myford	85	Terraces	No	—
	Myford-Sandy loam	10	Terraces	No	—
	Cieneba-Sandy loam	3	Ridges	No	—
	Yorba-Cobbly sandy loam	2	Terraces	No	—
217: Xeralfic arents, loamy, 2 to 9 percent slopes	Xeralfic arents	85	Hills	No	—
	Unnamed-Undisturbed	15	—	No	—

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American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

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Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Attachment C. General Site Photos

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Attachment C– Photographs

Photograph	Information
	Photograph #: 1 Photo Date: 3/25/2024 Location: 33.4299899, -117.6307980 Direction: 140 Notes: View of the Area #1 study area, riprap on slopes in background.
	Photograph #: 2 Photo Date: 3/25/2024 Location: 33.4293927, -117,6302882 Direction: 140 Notes: View of Area #1 study area, west of the railroad tracks. Riprap on slopes on the left.

Photograph	Information
	Photograph #: 3 Photo Date: 3/25/2024 Location: 33.4290212, -117.6294956 Direction: 315 Notes: View of Area #1 study area, big saltbush scrub (*Atriplex lentiformis* Shrub Alliance) on bluff slopes, east of railroad tracks and pedestrian trail.
	Photograph #: 4 Photo Date: 3/25/2024 Location: 33.427053, -117.628046 Notes: View of UVC-1 west of pedestrian beach trail path within the Area #2 study area. View towards east.

Photograph	Information
	Photograph #: 5 Photo Date: 3/25/2024 Location: 33.426951, -117.627965 Notes: View of Road Rut A and B with standing water along pedestrian beach trail path within the Area #2 study area. View towards south.
	Photograph #: 6 Photo Date: 3/25/2024 Location: 33.425299, -117.626639 Direction: 30 degrees Notes: View of landslide area at the Mariposa Pedestrian Bridge with retaining wall in place within the Area #2 study area.

Photograph	Information
	Photograph #: 7 Photo Date: 3/25/2024 Location: 33.425009, -117.626134 Notes: View of Road Rut C along railroad with water pooling from seeps in bluffs within the Area #2 study area. Culvert filled in with sediment causing water to pool.
	Photograph #: 8 Photo Date: 3/25/2024 Location: 33.424277, -117.625335 Direction: 40 degrees Notes: View of double three-foot concrete culverts which outlets to ocean within the Area #2 study area. View towards east.

Photograph	Information
	Photograph #: 9 Photo Date: 3/25/2024 Location: 33.424211, -117.625244 Direction: 40 degrees Notes: View of stairway from pedestrian bridge to beach within the Area #2 study area. View towards east.
	Photograph #: 10 Photo Date: 3/25/2024 Location: 33.4046556, -117.6059474 Direction: 315 Notes: View of California brittlebush (*Encelia California)* east of rail ROW along pedestrian trail within the Area #4 study area. View towards north.

Photograph	Information
	Photograph #: 11 Photo Date: 3/25/2024 Location: 33.4039563, -117.6054610 Direction: 340 Notes: Photo of Road Rut D within the Area #4 study area. Railroad tracks on left and coastal bluffs on right.
	Photograph #: 12 Photo Date: 3/25/2024 Location: 33.4025713, -117.6043916 Direction: 135 Notes: Photo of the Area #4 study area. California brittlebush scrub below unvegetated coastal bluffs on left and railroad tracks on right.

Photograph	Information
	Photograph #: 13 Photo Date: 3/25/2024 Location: 33.4003048, -117.6027707 Direction: 340 Notes: Photo of iceplant mats on vegetated slopes west of the railroad tracks within Area #4 study area.
	Photograph #: 14 Photo Date: 3/25/2024 Location: 33.3993611, -117.6017042 Direction: 135 Notes: Photo of giant reed marsh (*Arundo donax*) east of railroad tracks within the Area #4 study area.

Photograph	Information
	Photograph #: 15 Photo Date: 3/25/2024 Location: 33.3989008, -117.6016861 Direction: 340 Notes: Photo of big saltbush scrub on sand berm west of railroad tracks within the Area #4 study area.
	Photograph #: 16 Photo Date: 3/25/2024 Location: 33.3979590, -117.6009703 Direction 135 Notes: Photo of vegetation adjacent to railroad tracks within the Area #4 study area. Big saltbush scrub on coastal bluffs to the left, sand berm in the middle, and beach habitat on the right.