Appendix C

Biological Resources Report

Draft Technical Report

BIOLOGICAL RESOURCES REPORT OF THE NORTH PORT OF OAKLAND REFUSE DISPOSAL SITE PROJECT

February 2024

Prepared for:

PORT OF OAKLAND

Brandon Reed
Port of Oakland
530 Water Street
Oakland, CA 94607

Prepared by:

MONTROSE ENVIRONMENTAL

Montrose Environmental
1 Kaiser Plaza, Suite 340
Oakland, CA 94612
Contact: Tiffany Hernandez

Table of Contents

Appendices

Figures

Acronyms and Abbreviations

AMM	Avoidance and Minimization Measures
APD	Airport Perimeter Dike
CDFW	California Department of Fish and Wildlife
CCR	California Code of Regulations
CDSM	Cement deep soil mixing
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
IPaC	Information for Planning and Conservation
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
Montrose	Montrose Environmental
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPORD	North Port of Oakland Refuse Disposal
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
Port	Port of Oakland
Project	Seismic Improvements to the APD
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
°F	degrees Fahrenheit

1 Introduction

1.1 Project Overview

The Port of Oakland (Port) is planning for the completion of the Seismic Improvements to the Airport Perimeter Dike (APD) Project (Project). The primary objective of the Project is to maintain the flood protection of the APD system following a major earthquake in the San Francisco Bay Area. In 2015, the Port adopted the APD Federal Emergency Management Agency (FEMA) Seismic Improvements Project Mitigated Negative Declaration (MND), to meet the requirements of the California Environmental Quality Act (CEQA) Statute and Guidelines. Since project approval in 2015, the Port determined that seismic improvements to the airport dike would need to utilize an alternate method of reinforcement. The revisions to the project description include but are not limited to:

- Change of seismic improvement method to cement deep soil mixing (CDSM). Use of CDSM would improve seismic stability of APD. CDSM would generate excess material and thus would require management to occur at NPORD Site.
- Change to material management approach, including hauling of excess soil-cement and other soil generated by the seismic improvement construction to a previously unanalyzed offsite location.

The seismic improvements for the Project includes the export of excess soil and soil cement material of CDSM to a Port-owned closed-landfill called the North Port of Oakland Refuse Disposal (NPORD) Site. The Project will place approximately 37,000 cubic yards of compacted fill soils from construction activities at the NPORD Site. The placement of compacted fill soils across at NPORD Site would increase the existing landfill cover by approximately 3 feet. New material placed at NPORD Site would be stabilized through vegetative methods (hydroseed).

The focus of this biological resources report is to describe the existing biological conditions and sensitive habitat that is located within the southern half of Parcel B within the 10 acre NPORD Site (study area) that is being considered for the placement of excess CDSM material, as the NPORD Site had not been previously evaluated within the APD Project footprint. This biological resources report includes the potential for special-status species to occur at the site, and avoidance and minimization measures (AMM) to be considered to reduce potential impacts on sensitive species and habitats.

1.2 Location and Study Area

The NPORD Site is located in Oakland, California, within the U.S. Geological Survey (USGS) San Leandro quadrangle. The NPORD Site is a closed and covered landfill that consists of three parcels: A, B, and C. The study area for this biological resources report consists of approximately 10 acres located in the southern half of Parcel B where the Project's excess soil and soil cement material will be placed (**Figure 1**). The study area is located adjacent to Otis Spunkmeyer Field to the north, National Oceanic and Atmospheric Administration (NOAA) Weather Facility to the northeast, Port of Oakland Property directly to the south, and Harbor Bay Parkway directly to the west and Doolittle Drive to the north of the parcel. **Appendix A** provides representative site photographs.

Figure 1. Project Location

0 500 1,000 Feet

Project Area

Laydown Area

Seismic Work Area

NPORD Site Excess Soil Placement Area (Study Area)

Roads

Figure 1

Project Location

North Port of Oakland Refuse Disposal Site

Biological Resources Report

MONTROSE ENVIRONMENTAL

2 Study Area Description

2.1 Watershed and Topography

The study area is a part of the Bay Farm Island watershed, a largely developed area which covers 2.8 square miles in the cities of Alameda and Oakland (ACFCWCD 2023). The watershed drains via an engineered stormwater system to the Airport Channel, then to San Leandro Bay and the surrounding San Francisco Bay.

Topography in the study area is generally flat with an elevation ranging from 5 feet to 12 feet (USGS 2021). The study area has a slight grade along the south with a swale occurring within the southeast corner . Doolittle Drive follows the bay shoreline north and east of the study area and acts as a low levee. **Appendix A** provides representative photographs of the site.

2.2 Climate

The study area has a Mediterranean climate characterized by cool, wet winters and hot, dry summers. Average temperatures range from a low of 42 degrees Fahrenheit (°F) in January to a high of 74°F in September (NRCS 2023a). Average annual precipitation is approximately 23.3 inches, with the majority of precipitation occurring from November through April (WRCC 2023).

2.3 Geology and Soils

Bay Farm Island is underlain by artificial fill with soils typified as Urban Land (NRCS 2023b). This soil is not classified as a hydric soil (NRCS 2019).

2.4 Land Use

The study area is currently undeveloped. Like most of Bay Farm Island, the area was historically shallow bay waters, mudflats, or salt marsh before overlaid with fill material. From approximately 1950 to 1953, the study area was utilized as a municipal landfill operated by the City of Alameda (Golder 1989, Port of Oakland 2023). Between 1950 to 1953, the western portion of Parcel B began to receive household refuse from the City of Alameda (Golder 1989). Then from 1955 to 1974, the NPORD Site was leased from the Port and was then operated by the Oakland Scavenger Company and received building demolition debris that primarily consisted of wood, concrete, brick, and steel (Golder 1990).

The study area is surrounded primarily by undeveloped/developed parcels. The study area is bounded by Harbor Bay Parkway, Doolittle Road, and Old Earheart Road, Spunkmeyer Field to the north, Corica Park Golf Course to the west, and other Port of Oakland property and the Oakland International Airport to the south.

3 Existing Biological Resources

3.1 Inventory Methods

Baseline biological resources in the study area were evaluated by reviewing pertinent literature and conducting a field survey in order to supplement background information with representative site-specific data. The methods are described below.

3.1.1 Literature Reviewed

Biological resource information in the study area was evaluated by reviewing the following data sources:

- U.S. Fish and Wildlife Service (USFWS), Information for Planning and Conservation (IPaC) list of federally endangered and threatened species (USFWS 2023a);
- USFWS's Critical Habitat Portal (USFWS 2023b);
- National Marine Fisheries Service (NMFS) California Species List (NMFS 2023);
- California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB) queries for the USGS 7.5-minute quadrangles encompassing and surrounding the study area: San Leandro, Las Trampas Ridge, Hayward, Oakland East, Oakland West, San Mateo, Redwood Point, Newark, and Hunters Point (CDFW 2023);
- National Wetland Inventory (NWI) results (USFWS 2023c);
- Inaturalist (Inaturalist 2023);
- eBird records for the study area (Cornell Lab of Ornithology 2023); and
- Aerial photography (Google Earth 2023).

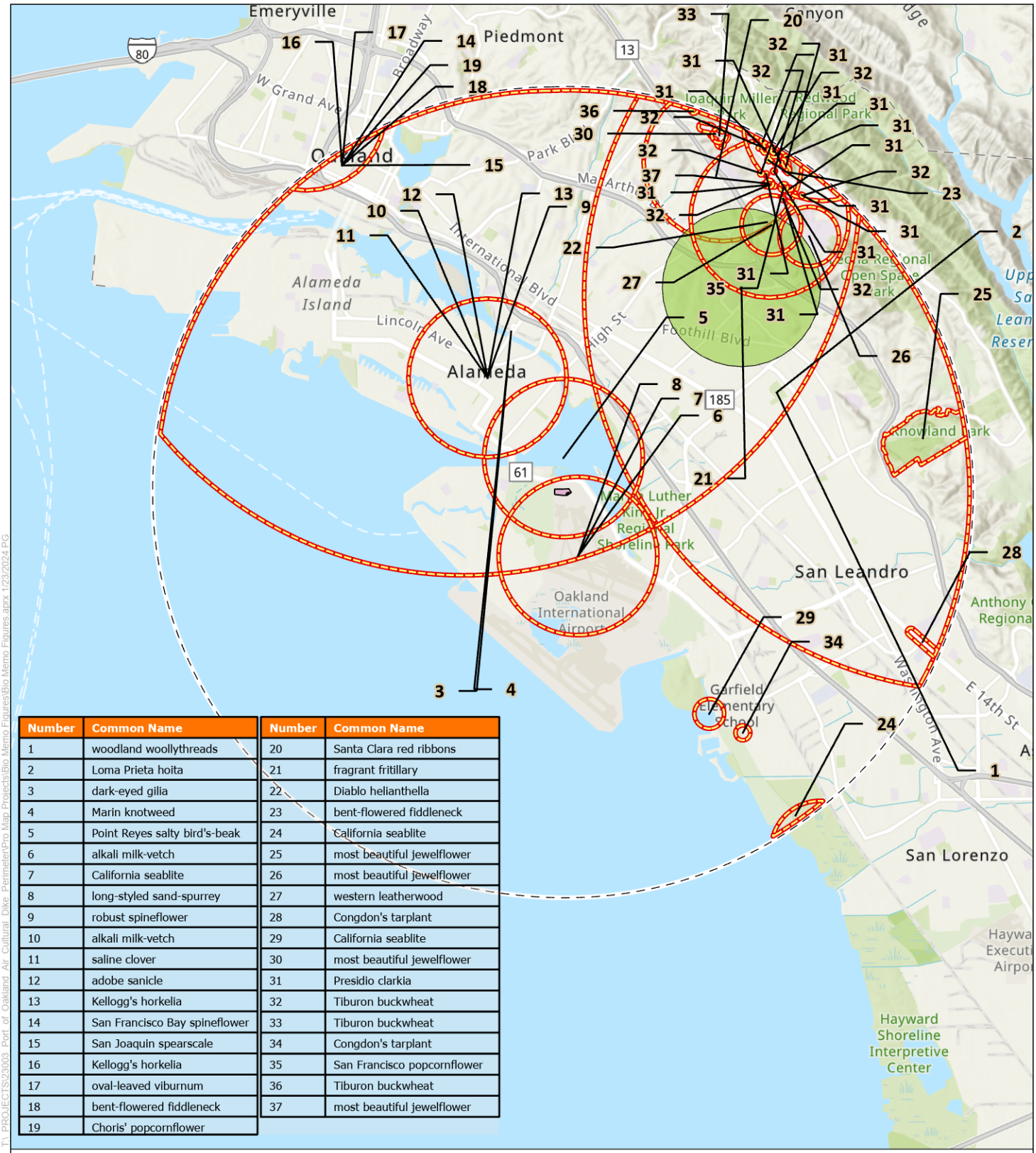
Results from the database queries are provided in **Appendix B**. Maps of CNDDB occurrence records within 5 miles of the study area for special-status plant (**Figure 2**) and special-status wildlife, including fish (**Figure 3**), were created based on the literature review.

3.1.2 Field Survey

Montrose Environmental (Montrose) biologist Jessica Gonzalez conducted a reconnaissance survey on December 11, 2023. The survey effort consisted of a visual assessment of site conditions. Maps of baseline biological resources including a regional aerial photographic overview of the study area and detailed aerial photography were used in the survey.

The survey was conducted in the field on foot. Natural and anthropogenic features, land cover types, and the presences of common and special-status species were noted. Visual aids, such as binoculars, were used to better assess wildlife species when appropriate.

Figure 2. Special-status Plant Species Occurrences



Number	Common Name
1	woodland woollythreads
2	Loma Prieta hoita
3	dark-eyed gilia
4	Marin knotweed
5	Point Reyes salty bird's-beak
6	alkali milk-vetch
7	California seablite
8	long-styled sand-spurrey
9	robust spineflower
10	alkali milk-vetch
11	saline clover
12	adobe sanicle
13	Kellogg's horkelia
14	San Francisco Bay spineflower
15	San Joaquin spearscale
16	Kellogg's horkelia
17	oval-leaved viburnum
18	bent-flowered fiddleneck
19	Choris' popcornflower

Number	Common Name
20	Santa Clara red ribbons
21	fragrant fritillary
22	Diablo helianthella
23	bent-flowered fiddleneck
24	California seablite
25	most beautiful jewelflower
26	most beautiful jewelflower
27	western leatherwood
28	Congdon's tarplant
29	California seablite
30	most beautiful jewelflower
31	Presidio clarkia
32	Tiburon buckwheat
33	Tiburon buckwheat
34	Congdon's tarplant
35	San Francisco popcornflower
36	Tiburon buckwheat
37	most beautiful jewelflower

N

0 1 2
Miles

NPORD Site Excess Soil Placement Area (Study Area)

5-Mile Buffer

Taxon

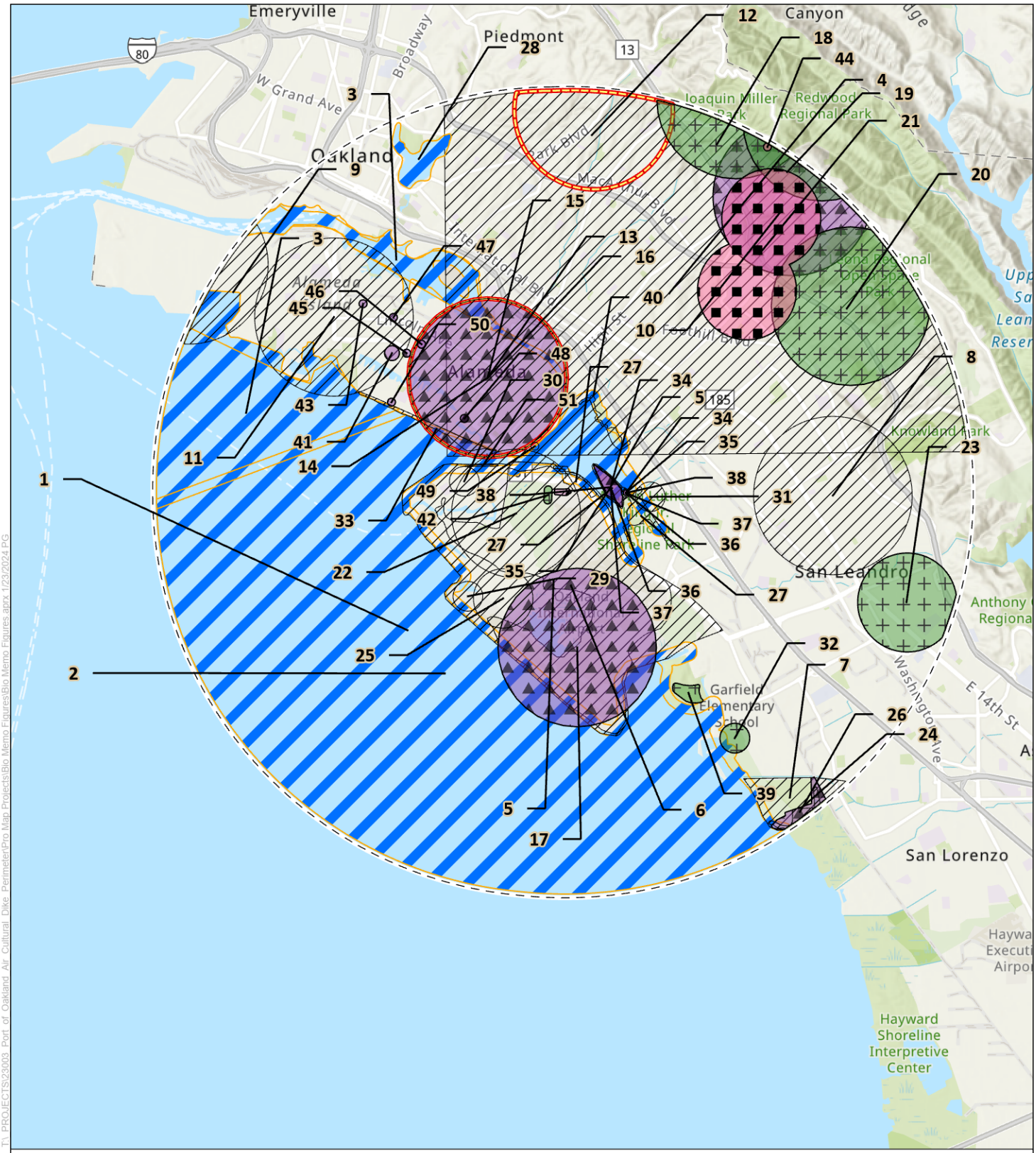
Dicots

Monocots

Figure 2
CNDDB Plants

Source: California Natural Diversity Database, January 2024

Figure 3. Special-status Wildlife Species



NPORD Site Excess Soil Placement Area (Study Area)

5-Mile Buffer

Taxon

Amphibians

Birds

Fish

Insects

Mammals

Reptiles

N

0 1 2

Miles

Figure 3

CNDDB Animals

MONTROSE ENVIRONMENTAL

Source: California Natural Diversity Database, January 2024

North Port of Oakland Refuse Disposal Site

Biological Resources Report

T:_PROJECTS\29303 Port of Oakland Air_Cultural_Dike_Perimeter\Pro Map Projects\Bio Memo Figures\Bio Memo Figures.aprx 1/29/2024 PG

Number	Common Name
1	green sturgeon - southern DPS
2	longfin smelt
3	longfin smelt
4	American peregrine falcon
5	Alameda song sparrow
6	western snowy plover
7	Alameda song sparrow
8	Alameda song sparrow
9	Alameda song sparrow
10	American badger
11	California black rail
12	foothill yellow-legged frog - central coast DPS
13	Alameda Island mole
14	California tiger salamander - central California DPS
15	Alameda song sparrow
16	yellow rail
17	salt-marsh wandering shrew
18	Bay checkerspot butterfly
19	western bumble bee
20	Bay checkerspot butterfly
21	Alameda whipsnake
22	California black rail
23	western bumble bee
24	salt-marsh harvest mouse
25	burrowing owl
26	California Ridgway's rail
27	California Ridgway's rail
28	tidewater goby
29	California least tern
30	California least tern
31	burrowing owl
32	monarch - California overwintering population
33	California Ridgway's rail
34	California black rail
35	yellow rail
36	salt-marsh wandering shrew
37	saltmarsh common yellowthroat
38	salt-marsh harvest mouse
39	monarch - California overwintering population
40	California Ridgway's rail
41	Alameda Island mole
42	monarch - California overwintering population
43	Alameda Island mole
44	Alameda whipsnake
45	Alameda Island mole
46	Alameda Island mole
47	Alameda Island mole
48	Alameda Island mole
49	California Ridgway's rail
50	Alameda Island mole
51	California Ridgway's rail

3.2 Terrestrial Communities

The main habitat within the NPORD Site is ruderal or developed land cover. Vegetation within this landcover type is dominated by a mixture of non-native annual grasses, and nonnative opportunistic weedy herbaceous species. Plant species observed during reconnaissance survey included non-native annual grasses, common tarweed (*Centromadia pungens ssp. pungens.*), stinkwort (*Dittrichia graveolens*), yellow star thistle (*Centaurea solstitialis*), wild radish (*Raphanus sativus*), poa (*Poa sp.),* field mustard (*Brassica rapa*)*,* bristly ox-tongue (*Helminthotheca echioides*)*,* sacred thornapple (*Datura wrightii*)*,* wild fennel (*Foeniculum vulgare*)*,* ribwort plantain (*Plantago lanceolata*), curly dock *(Rumex crispus*)*,* switchgrass (*Panicum virgatum*), cheeseweed (*Malva parviflora)*, common mallow (*Malva neglecta*)*,* and nightshade (*Solanum sp*.).

Shrubs, primarily native coyote brush (*Baccharis pilularis*), are present only within the western portion of the study area adjacent to Harbor Way Parkway. Large stands of nonnative, invasive giant reed (*Arundo donax*) and pampas grass (*Cortaderia selloana*) are present within the southeast portion of the study area. Himalayan blackberry (*Rubus armeniacus*) and one tree, an acacia (*Acacia sp*.) are present along the fence line of Spunkmeyer field. Ice plant (*Carpobrotus edulis*) is present in the western portion of the study area adjacent to Harbor Way Parkway.

Within the terrestrial community of the study area, bird species that were observed during the field survey included killdeer (*Charadrius vociferus*), savanna sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), American kestrel (*Falco sparverius*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), American robin (*Turdus migratorius*), house finch (*Haemorhous mexicanus*), American crow (*Corvus brachyrhynchos*), and Canada goose (*Branta canadensis*). Trees and brush within this habitat may support nesting habitat for bird species.

Additionally, observed within the ruderal habitat of the study area were California ground squirrels (*Otospermophilus beecheyi*) and burrow activity was observed throughout the study area but they were concentrated within the north and northwest portion of the study area.

Developed land cover includes the access roads present within the study area.

3.3 Special-Status Species

For the purpose of this report, special-status plant and wildlife species refer to those species that meet one or more of the following criteria:

- Species that are listed as threatened or endangered under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] Section 17.12 for listed plants, 50 CFR Section 17.11 for listed animals);
- Species that are candidates for possible future listing as threatened or endangered under ESA (76 Federal Register [FR] Section 66370);
- Species that are listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare under the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 et seq.);
- California Rare Plant Rank (CRPR) List 1 and 2 species; and

- Animals fully protected in California (Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]) or species designated as "Species of Special Concern" by CDFW.

3.3.1 Plants

Special-status plants known to occur in the vicinity of the study area were evaluated for their potential to occur (**Appendix C**). No special-status plants were identified by the background review as possibly occurring in the study area due to the study area being heavily altered and disturbed from former landfill and land management activities. No special-status plant species were observed during the biological reconnaissance survey.

3.3.2 Wildlife

Special-status wildlife known to occur in the vicinity of the study area were evaluated for their potential to occur are described in detail in **Appendix C**. Special-status wildlife species with potential to occur in the study area are summarized below.

Two special-status invertebrate species, Crotch bumble bee (*Bombus crotchii*) and Monarch Butterfly (*Danaus plexippus*), may potentially occur within the study area. The study area is within the historic range and mapped range of this species. However, there are no known occurrences within 5 miles of study area (CDFW 2023). The study area may support marginally suitable foraging habitat for Crotch bumble bee as suitable food plant sources were observed onsite and in the vicinity of the study area. Flowering plants observed within the study area that the Crotch bumble bee may forage on are common tarweed, wild radish, field mustard, common mallow, nightshade, sacred thornapple, ice plant, yellow star thistle, and Himalayan blackberry. While the study area may provide nest sites (e.g., abandoned rodent burrows), and hibernation sites for over-wintering, the study area has had significant anthropomorphic disturbance and site modifications (e.g., closed landfill, and developed habitat). This species has the potential to forage and visit the study area but are not expected to overwinter or nest in the Project vicinity due to anthropomorphic disturbance and significant habitat modifications. This species is not expected to occur in the study area.

The study area may support marginally suitable foraging habitat for Monarch butterfly (Monarch) as suitable habitat and food plant sources were observed onsite and in the vicinity of the study area. Flowering plants observed within the study area that the Monarch may forage on are common tarweed, wild radish, field mustard, common mallow, nightshade, sacred thornapple, ice plant, yellow star thistle, and Himalayan blackberry. Known overwintering habitat for Monarch is known to occur within trees in the vicinity of Corica Park Golf Course (outside of the study area) approximately 200 feet from the study area (CDFW 2023). However, monarch butterfly overwintering groves are not documented in the study area and the study area generally lacks key habitat elements for this species, such as milkweeds (*Asclepias spp.*). This species has the potential to forage and visit the study area but is not expected to overwinter on site. This species is not expected to occur in the study area.

Two special-status bird species, western burrowing owl (*Athene cunicularia*) and northern harrier (*Circus hudsonius*) may potentially occur within the study area. Two known CNDDB occurrences for burrowing owl have been recorded less than a mile east of the study area; one occurrence within Bay Farm Island, located northwest of Oakland International Airport, and the other within San Leandro Bay (CDFW 2023). Additionally, other sightings of burrowing owl have been reported within the vicinity of the Bay Farm Island, with one occurrence within Arrowhead Marsh in 2018

and several sightings within Martin Luther King Jr. Regional Shoreline Park in 2018, both occurring less than a mile away from the study area (iNaturalist 2023). This species was observed in May 2023 in the East End Neighborhood in the City of Alameda, less than one mile northwest of the study area (iNaturalist 2023). Historically, the Oakland International Airport had known burrowing owl occurrences, with no observances within the last decade (URS 2009). The study area and surrounding undeveloped habitat contain key ecological and suitable habitat elements to support burrowing owl, including suitable burrow and foraging habitat. Burrowing owl was not observed during the biological reconnaissance survey, and protocol level surveys for this species were not conducted during reconnaissance survey. This species has the potential to occur in the study area.

The study area and surrounding undeveloped areas contain key ecological and suitable habitat elements that support northern harrier, including suitable nesting habitat and foraging habitat with rodents and other prey base. The species has been observed within the Southfield of the Airport, including during December 2023 during the annual Golden Gate Bird Alliance Christmas Bird Count (Cornell Lab of Ornithology 2023). The nearest known CNDDB occurrence is approximately 8.50 miles from study area located in Cogswell Marsh in Hayward Shoreline Reginal Park (CDFW 2023). Although this species was not observed during the reconnaissance survey, there is potential for northern harrier to forage and nest in and/or adjacent to the study area.

3.4 Critical Habitat

No Critical Habitat is designated within the study area (USFWS 2023b).

3.5 Federal and State Waters and Wetlands

No creeks or potentially jurisdictional waters of the U.S. or state subject to United States Army Corps of Engineers (USACE) or Regional Water Quality Control Board (RWQCB) jurisdiction were observed in the study area. No wetlands are present within the study area. The Port has worked with USACE to receive multiple jurisdictional determinations which show no jurisdictional waters or wetlands in the study area of NPORD Site such as the *Reverification of USACE jurisdictional Wetlands/Waters Delineation for the Oakland International Airport delineation* (Huffman-Broadway Group, Inc (2016). The most recent determination, submitted in 2022, was received from USACE in February 2024.

4 Summary and Considerations

This report summarizes sensitive biological resources with potential to occur within the study area. Recommended measures to avoid and minimize impacts to special-status wildlife species are described below.

No special-status plants are anticipated to occur in the study area.

The study area is undeveloped with ruderal, developed habitat, bordered by a single acacia tree and shrubs along the northern parcel boundary. These woody plant species provide suitable habitat for nesting bird species. The study area provides suitable foraging habitat and prey base (e.g., ground squirrels) for raptors, while providing open foraging habitat for passerine bird species. Additionally, the undeveloped ruderal habitat may provide suitable nesting and foraging habitat with rodents and other vertebrates for northern harriers. To avoid and minimize the potential impacts to bird species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, AMM-1 would require pre-construction surveys for nesting birds:

AMM 1 – Pre-construction survey(s) for nesting birds

To the extent feasible, construction activities should be scheduled to avoid the nesting season. If Project activities are scheduled to take place outside the nesting season, impacts to nesting birds protected under the MBTA would be avoided. The nesting season for most birds in Alameda County extends from February 1 through August 31, inclusive. If it is not possible to schedule Project activities outside the nesting bird, then the following measures will be implemented:

A qualified biologist will conduct pre-construction surveys for nesting birds. These surveys shall be conducted no more than seven days prior to the initiation of Project activities, including tree and vegetation removal. During these surveys, the biologist shall inspect all trees and other potential nesting habitats (e.g., shrubs, ruderal grasslands, and structures) in and immediately adjacent to the construction areas for nests.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, a non-disturbance buffer zone will be established around the nest at the biologist's discretion and in accordance with regulatory permits and conditions. Buffers zones will remain until the birds have fledged or the nest is no longer active, as determined by a qualified biologist.

AMM 2 – Protection measures for burrowing owls

A qualified wildlife biologist shall assess burrowing owl presence or activity (e.g., molted feathers, cast pellets, prey remains, eggshell fragments, or excrement) at or near any burrow entrance. These burrow assessments for burrowing owl presence or activity shall be conducted prior to construction activities. If potential activity is suspected, three or more surveillance surveys shall be conducted during daylight with each visit occurring at least 3 weeks apart during the peak breeding season (April 15 to July 15), when burrowing owls are most detectable, as recommended by the California Burrowing Owl Consortium's (CBOC's) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1997) and CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012).

- If no burrowing owl or signs of burrowing owls are detected during the survey, no further actions shall be required.

- If the pre-construction surveys detect nesting burrowing owls, a buffer shall be established within which no ground-disturbing or vegetation removal activity is permissible. Buffers around occupied burrows shall be determined by a qualified biologist and approved by CDFW.

If avoidance buffers are not feasible and occupied burrows are to be relocated, a passive relocation plan shall be developed by a qualified biologist and approved by CDFW prior to implementation. The plan shall be subject to the approval of CDFW.

5 References

Alameda County Flood Control & Water Conservation District (ACFCWCD).2023. Alameda County Watersheds: Bay Farm Island Watershed. Available at: https://acfloodcontrol.org/the-work-we-do/resources/#explore-watersheds. Accessed December 11, 2023.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. The Jepson Manual: Vascular Plants of California. Second edition. University of California Press, Berkeley, CA.

California Department of Fish and Wildlife (CDFW). 2012. CDFW's Staff Report on Burrowing Owl Mitigation. March 7, 2012.

California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database. RareFind 5. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed December 11, 2023.

CDFW. See California Department of Fish and Wildlife.

California Burrowing Owl Consortium (CBOC). 1997. Staff report on burrowing owl mitigation. Lincer, J. L. and K. Steenhof (editors). 1997.

Cornell Lab of Ornithology. 2023. eBird Species Database. Available at: https://ebird.org/map. Accessed December 11, 2023.

Golder Associates Inc. (Golder). 1989. SWAT Proposal and Preliminary Hydrogeologic Investigation Report. June 30.

Golder. 1990. Final Report, Solid Waste Assessment Test for the North Port of Oakland Refuse Disposal Site, submitted to Waste Management of North America, Inc., San Jose, California. June 27.

Google Earth. 2023. Aerial Photography. Google Earth Pro, 7.3.6.9345. Mountain View, California.

Huffman-Broadway Group, Inc. 2016. Reverification of USACE Jurisdictional Wetlands/Waters Determination for Oakland International Airport, Port of Oakland, City of Oakland, Alameda County, California (USACE File# 252600S).

iNaturalist, 2023. Bay Farm Island Observations. Available at: https://www.inaturalist.org/observations?nelat=37.76104270934109&nelng=-122.18594112474646&place_id=any&subview=map&swlat=37.715565687773434&swlng=-122.25632228929724&taxon_id=19975. Accessed December 11, 2023.

National Marine Fisheries Service (NMFS). 2023. California Species List. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Available at: https://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html. Accessed December 11, 2023.

Natural Resources Conservation Service (NRCS). 2019. National Hydric Soils List. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed December 11, 2023.

Natural Resources Conservation Service (NRCS). 2023a. Climate Analysis for Wetlands (WETS). Oakland International Airport Station. Available at:

https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/agAcisClimateData/. Accessed December 11, 2023.

Natural Resources Conservation Service (NRCS). 2023b. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm. Accessed December 11, 2023.

NMFS. See National Marine Fisheries Service.

NRCS. See Natural Resources Conservation Service.

URS. 2009. Final Burrowing Owl Survey Report: 2008-2009 Non-Breeding and 2009 Breeding Season Surveys. Prepared for Port of Oakland. July 2009.

U.S. Fish and Wildlife Service (USFWS). 2023a. Information for Planning and Conservation List of Federally Endangered and Threatened Species. Available at: https://ecos.fws.gov/ipac/. Accessed December 11, 2023.

U.S. Fish and Wildlife Service (USFWS). 2023b. Critical Habitat Data. Available at: https://www.fws.gov/sacramento/es/Critical-Habitat/Data/. Accessed December 11, 2023.

U.S. Fish and Wildlife Service (USFWS). 2023c. National Wetland Inventory. Available at: https://www.fws.gov/wetlands/. Accessed December 11, 2023.

USFWS. See U.S. Fish and Wildlife Service.

USGS. See U.S. Geological Survey.

U.S. Geological Survey. 2021. Topo View. https://ngmdb.usgs.gov/topoview/viewer/. Accessed December 11, 2023.

Western Regional Climate Center (WRCC). 2023. Climate Summary for Oakland Museum, California (046336). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336 . Accessed December 11, 2023.

WRCC. See Western Regional Climate Center.

Appendix A
Site Photographs

Appendix A. Site Photographs

Photo No. 1	Date: 12/11/2023

Description: the North Port of Oakland Refuse Disposal (NPORD) site (study area) facing east. Photo was taken at access road towards the parcel boundary of Otis Spunkmeyer Field to the north of study area.

Along fence line, (north) *Acacia sp.* and Himalayan blackberry (*Rubus armeniacus*). Throughout ruderal grassland occurs within NPORD site.

Photo No. 2	Date: 12/11/2023

Description: Study area facing southwest. Photo was taken at access road. Study area is dominated by a mixture of non-native annual grasses, and nonnative opportunistic weedy species.

Appendix A. Site Photographs

Photo No. 3	Date: 12/11/2023

Description:
View from south corner of study area, facing north. To the west is Harbor Bay Parkway and Corica Park Golf Course.

Study area is dominated by a mixture of non-native annual grasses, and nonnative opportunistic weedy species.

Photo No. 4	Date: 12/11/2023

Description:
Facing southwest, non-native annual grasses ground squirrel burrows and California ground squirrels (*Otospermophilus beecheyi*) were observed throughout the study area but were concentrated within the north and northwest study area.

Appendix A. Site Photographs

Photo No. 5	Date: 12/11/2023

Description: Facing northeast. The study area and surrounding undeveloped habitat contain key ecological and suitable habitat elements to support potentially support Burrowing owl (BUOW) species, including foraging habitat and suitable burrow habitat.

Photo No. 6	Date: 12/11/2023

Description: Facing east, another burrow by the central access road that could potentially support BUOW species. Clipboard placed to show size reference to burrow.

Appendix B
USFWS and CNDDB Species Lists

IPaC resource list

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

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

Location

Alameda County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

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

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

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

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

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

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

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

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail Rallus longirostris obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern Sterna antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

Yellow-billed Cuckoo Coccyzus americanus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3911

Reptiles

NAME	STATUS

Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/5524

Northwestern Pond Turtle Actinemys marmorata — Proposed Threatened

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1111

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2891

California Tiger Salamander Ambystoma californiense — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS

Tidewater Goby Eucyclogobius newberryi — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/57

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus	Candidate

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi	Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS
California Seablite Suaeda californica	Endangered

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/6310

Contra Costa Goldfields Lasthenia conjugens	Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/7058

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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

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

NAME	BREEDING SEASON

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

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

Probability of Presence Summary

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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

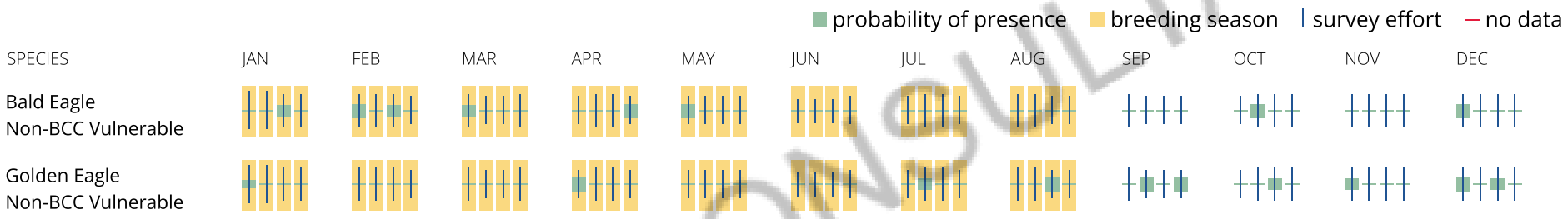
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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

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



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

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

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

What if I have eagles on my list?

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

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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

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

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Black Oystercatcher Haematopus bachmani This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Turnstone Arenaria melanocephala — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

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

Marbled Godwit Limosa fedoa

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

Breeds elsewhere

Nuttall's Woodpecker Picoides nuttallii

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Breeds Apr 1 to Jul 20

Oak Titmouse Baeolophus inornatus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Breeds Mar 15 to Jul 15

Olive-sided Flycatcher Contopus cooperi

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Breeds May 20 to Aug 31

Short-billed Dowitcher Limnodromus griseus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Breeds elsewhere

Tricolored Blackbird Agelaius tricolor

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Breeds Mar 15 to Aug 10

Western Grebe aechmophorus occidentalis

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Breeds Jun 1 to Aug 31

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

Probability of Presence Summary

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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

Breeding Season (■)

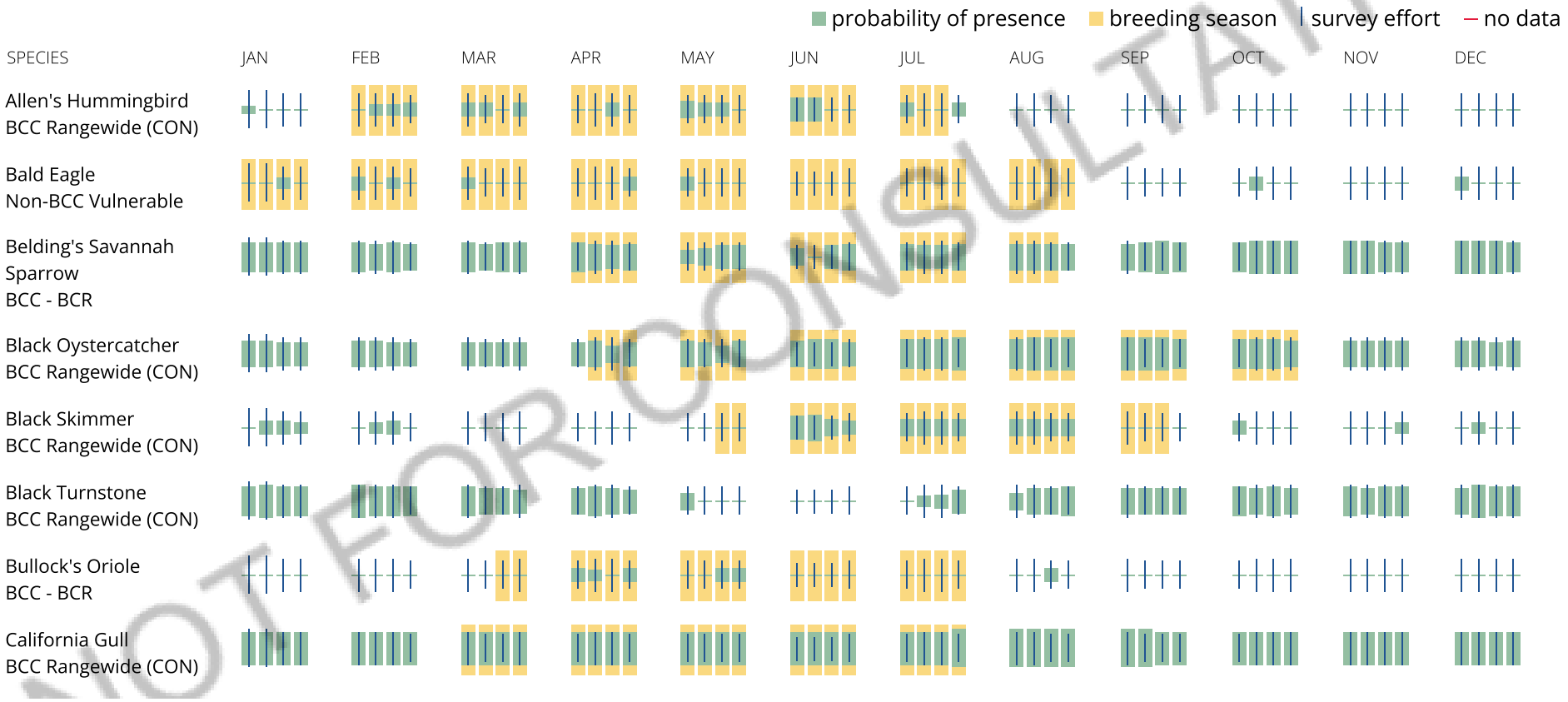
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

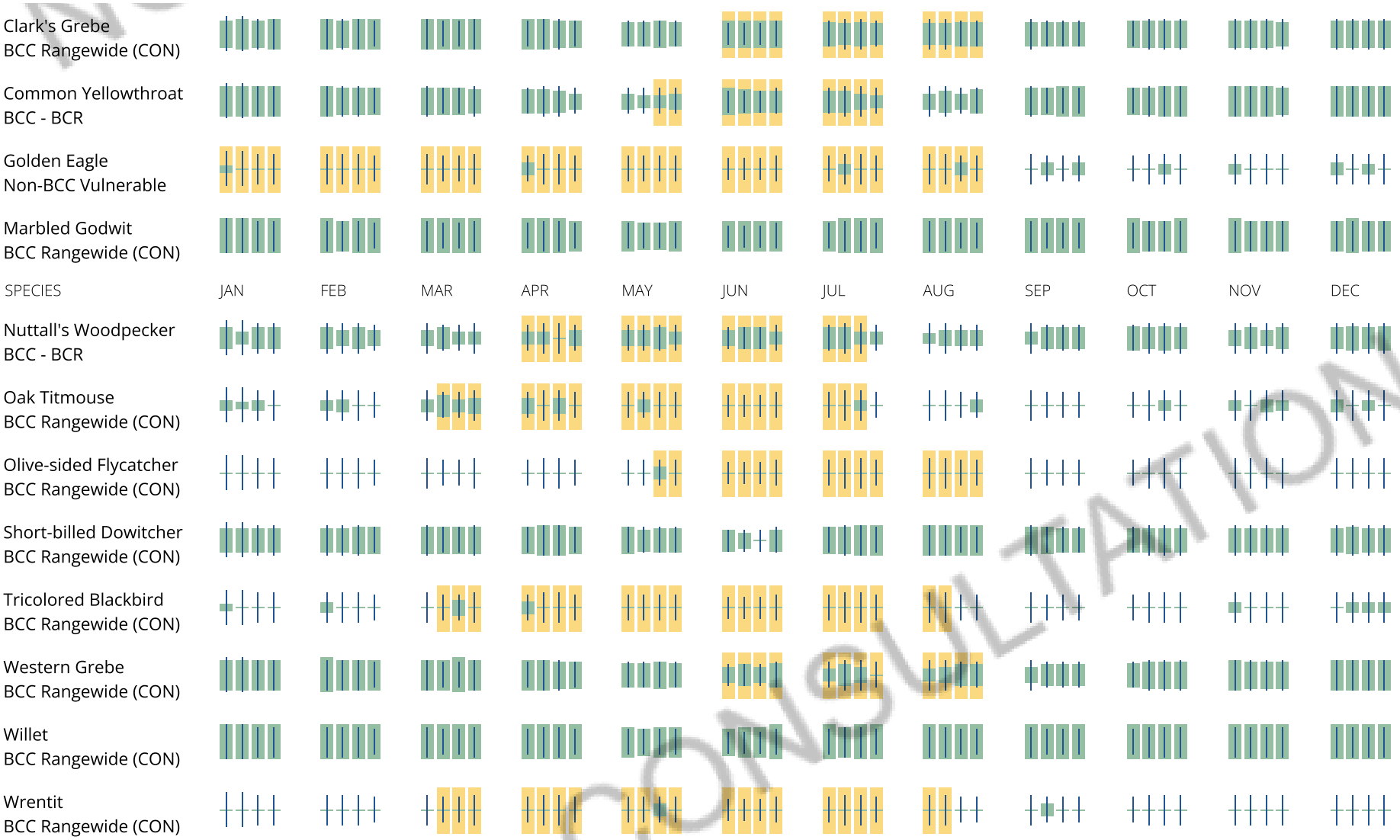
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

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

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





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

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

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

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

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

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

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

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

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

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

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Leandro (3712262) OR Hunters Point (3712263) OR Oakland East (3712272) OR Oakland West (3712273) OR Hayward (3712261) OR Las Trampas Ridge (3712271) OR Newark (3712251) OR Redwood Point (3712252) OR San Mateo (3712253))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha duttonii San Mateo thorn-mint	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Acipenser medirostris pop. 1 green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G4G5T2	S2	1B.2
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos pallida pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S2	SSC
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	PDFAB0F7B2	None	None	G2T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Calicina minor Edgewood blind harvestman	ILARA13020	None	None	G1	S1	
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Cirsium fontinale var. fontinale fountain thistle	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Clarkia franciscana Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G4T1	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys venustus venustus Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Eriophyllum latilobum San Mateo woolly sunflower	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
Eryngium aristulatum var. hooveri Hoover's button-celery	PDAPI0Z043	None	None	G5T1	S1	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	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
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S3	
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fritillaria biflora var. ineziana Hillsborough chocolate lily	PMLIL0V0M1	None	None	G3G4T1	S1	1B.1
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R0W1	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Hesperolinon congestum Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
Heteranthera dubia water star-grass	PMPON03010	None	None	G5	S2	2B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Ischnura gemina San Francisco forktail damselfly	IIODO72010	None	None	G2	S2	
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
Layia carnosa beach layia	PDAST5N010	Threatened	Endangered	G2	S2	1B.1
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia arachnoidea Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
Malacothamnus arcuatus arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2T3	S2	SSC
Microcina leei Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	
Microcina lumi Lum's micro-blind harvestman	ILARA47050	None	None	G1	S1	
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Nannopterum auritum double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Maritime Chaparral Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T3Q	S3	
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GX	SX	1A
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Pomatiopsis californica Pacific walker	IMGASJ9020	None	None	G1	S1	
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S2	FP
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	AAABH01054	Threatened	Endangered	G3T2	S2	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S3	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Rynchops niger black skimmer	ABNNM14010	None	None	G5	S2	SSC
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Scapanus latimanus parvus Alameda Island mole	AMABB02031	None	None	G5T1Q	SH	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3	SSC
Sorex vagrans halicoetes salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
Spergularia macrotheca var. longistyla long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
Speyeria zerene myrtleae Myrtle's silverspot butterfly	IILEPJ608C	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Stuckenia filiformis ssp. alpina northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis sirtalis tetrataenia San Francisco gartersnake	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Viburnum ellipticum	PDCPR07080	None	None	G4G5	S3?	2B.3
oval-leaved viburnum						

Record Count: 124

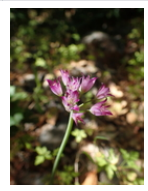
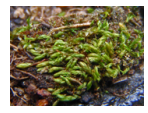
CNPS Rare Plant Inventory

California Native Plant Society

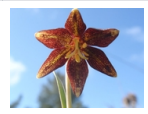
Search Results

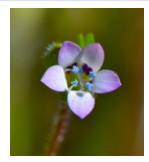
75 matches found. Click on scientific name for details

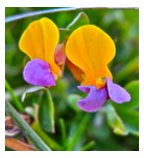
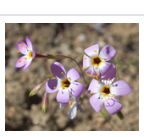
Search Criteria: 9-Quad include [**3712272:3712252:3712251:3712262:3712271:3712261:3712273:3712263:3712253**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Acanthomintha duttonii	San Mateo thorn-mint	Lamiaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2011 Aaron Schusteff
Allium peninsulare var. *franciscanum*	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G4G5T2	S2	1B.2	Yes	2001-01-01	 © 2019 Aaron Arthur
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	 © 2011 Neal Kramer
Anomobryum julaceum	slender silver moss	Bryaceae	moss		None	None	G5?	S2	4.2		2001-01-01	 © 2013 Scot Loring
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Arctostaphylos regismontana	Kings Mountain manzanita	Ericaceae	perennial evergreen shrub	Dec-Apr	None	None	G2	S2	1B.2	Yes	1994-01-01	No Photo Available
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr)Jun-Oct	None	None	G2T2	S2	1B.2	Yes	2001-01-01	 ©2009 Neal Kramer
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available

Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3?	S3?	4.2	Yes	1980-01-01	No Photo Available
Calochortus uniflorus	pink star-tulip	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4	S4	4.2		2010-03-04	 © 2021 Scot Loring
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	 Dean Wm. Taylor 1997
Castilleja ambigua var. *ambigua*	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G4T4	S3S4	4.2		2009-02-04	 ©2011 Dylan Neubauer
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	None	None	G3T2	S2	1B.1	Yes	1994-01-01	No Photo Available
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2		1974-01-01	 ©2017 John Doyen
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available
Chorizanthe robusta var. *robusta*	robust spineflower	Polygonaceae	annual herb	Apr-Sep	FE	None	G2T1	S1	1B.1	Yes	1980-01-01	No Photo Available
Cirsium fontinale var. *fontinale*	fountain thistle	Asteraceae	perennial herb	(Apr)May-Oct	FE	CE	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Clarkia concinna ssp. *automixa*	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May-Jun(Jul)	None	None	G5?T3	S3	4.3	Yes	1994-01-01	No Photo Available
Clarkia franciscana	Presidio clarkia	Onagraceae	annual herb	May-Jul	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available

Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2017 Steve Matson
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	May-Aug(Nov)	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Eriogonum luteolum var. *caninum*	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	None	None	G5T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Eriophyllum latilobum	San Mateo woolly sunflower	Asteraceae	perennial herb	May-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	Apiaceae	annual/perennial herb	(Jun)Jul(Aug)	None	None	G5T1	S1	1B.1	Yes	1984-01-01	No Photo Available
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2	Yes	2016-09-13	No Photo Available
Erysimum franciscanum	San Francisco wallflower	Brassicaceae	perennial herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Erythranthe laciniata	cut-leaved monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2017 Steven Perry
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1988-01-01	No Photo Available
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		None	None	G3?	S2	1B.2		2001-01-01	 ©2021 Scot Loring
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
Fritillaria biflora var. *ineziana*	Hillsborough chocolate lily	Liliaceae	perennial bulbiferous herb	Mar-Apr	None	None	G3G4T1	S1	1B.1	Yes	1994-01-01	 © 2012 Toni Corelli
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2004 Carol W. Witham

Gilia capitata ssp. *chamissonis*	blue coast gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G5T2	S2	1B.1	Yes	2001-01-01	 © 2017 John Doyen
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2		2001-01-01	 © 2017 John Doyen
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2013 Christopher Bronny
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2	Yes	1988-01-01	 © 2015 Vernon Smith
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2		1994-01-01	 © 2006 Doreen L. Smith
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	FT	CT	G1	S1	1B.1	Yes	1974-01-01	 © 2009 Neal Kramer
Heteranthera dubia	water star-grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	None	None	G5	S2	2B.2		2013-10-10	 ©2010 Louis-M. Landry
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	None	None	G2?	S2?	1B.1	Yes	2001-01-01	 © 2004 Janell Hillman
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	FT	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2011 Dylan Neubauer

Horkelia cuneata var. *sericea*	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	None	None	G4T1?	S1?	1B.1	Yes	1988-01-01	 © 2018 Neal Kramer
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2		2004-01-01	 © 2015 John Doyen
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2	Yes	2006-10-12	 © 2014 Aaron Schusteff
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	© 2020 Zoya Akulova
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	 © 2013 Neal Kramer
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	FT	CE	G2	S2	1B.1		1988-01-01	 © 2007 Aaron Schusteff
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2010 Aaron Schusteff
Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2	Yes	1994-01-01	 © 2007 Len Blumin
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2	Yes	1994-01-01	 © 2003 Doreen L. Smith

Leptosiphon rosaceus	rose leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G1	S1	1B.1	Yes	2001-01-01	 © 2013 Aaron Schusteff
Lessingia arachnoidea	Crystal Springs lessingia	Asteraceae	annual herb	Jul-Oct	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2008 Neal Kramer
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial deciduous shrub	Apr-Sep	None	None	G2Q	S2	1B.2	Yes	1974-01-01	 © 2017 Keir Morse
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	Mar-Apr	None	None	G2G3	S2	1B.1		1974-01-01	 © 2021 Scot Loring
Monolopia gracilens	woodland woollythreads	Asteraceae	annual herb	(Feb)Mar-Jul	None	None	G3	S3	1B.2	Yes	2010-04-06	 © 2016 Richard Spellenberg
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	None	None	G3	S3	4.2	Yes	1984-01-01	No Photo Available
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	None	None	G3T1Q	S1	1B.2	Yes	1984-01-01	No Photo Available
Plagiobothrys diffusus	San Francisco popcornflower	Boraginaceae	annual herb	Mar-Jun	None	CE	G1Q	S1	1B.1	Yes	1974-01-01	No Photo Available
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	Mar-May	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	None	None	G2Q	S2	3.1	Yes	1974-01-01	No Photo Available

Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2		1974-01-01	No Photo Available
Sanicula maritima	adobe sanicle	Apiaceae	perennial herb	Feb-May	None	CR	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2	Yes	2017-06-16	No Photo Available
Streptanthus albidus ssp. *peramoenus*	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	None	None	G2T2	S2	1B.2	Yes	1988-01-01	 © 1994 Robert E. Preston, Ph.D.
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2		1994-01-01	 Dana York (2016)
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	FE	None	G1	S1	1B.1	Yes	1988-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	 © 2005 Dean Wm Taylor
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	None	None	G2?	S2?	1B.2	Yes	1974-01-01	No Photo Available
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3		1974-01-01	 © 2006 Tom Engstrom

Showing 1 to 75 of 75 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 29 December 2023].

Appendix C
Special-status Species Tables

The potential for each species to occur in the Study Area was assessed using the criteria outlined below.

None: the area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.

Not Expected: suitable habitat or key habitat elements might be present but might be of poor quality or isolated from the nearest extant occurrences, and/or the species is not known to occur in the area.

Possible: presence of suitable habitat or key habitat elements that potentially support the species.

Present: the species was either observed directly or its presence was confirmed by field investigations or in previous studies in the area

Table C-1. Special-status Plant Species

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Acanthomintha duttonii San Mateo thorn-mint	- / - / 1B.1	Chaparral, valley and foothill grassland. Uncommon serpentinite vertisol clays; in relatively open areas. 50-185 meters (m).	**None.** Suitable habitat is not present in the study Area.
Allium peninsulare var. franciscanum Franciscan onion	- / - / 1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides. 5-320 m.	**None.** Suitable serpentine habitat is not present in the Study Area.
Amsinckia lunaris bent-flowered fiddleneck	- / - / 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation (el.) 3-795 meters. Blooms March through June.	**Not expected.** Marginally suitable habitat is present in the Study Area.
Arctostaphylos pallida pallid manzanita	FT / SE / 1B.1	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. El. 180-460 meters. Blooms December through March.	**None.** Suitable habitat is not present in the Study Area.
Arctostaphylos regismontana Kings Mountain manzanita	- / - / 1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest. Granitic or sandstone outcrops. 240-705 m.	**None.** Suitable habitat is not present in the Study Area.
Astragalus tener var. *tener* alkali milk-vetch	- / - / 1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-168 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area. Two historic occurrences in Alameda and Bay Farm Island that are considered Possibly Extirpated and Extirpated (CDFW 2023).
Balsamorhiza macrolepis big-scale balsamroot	- / - / 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. El. 35-1,465 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area.
Calochortus pulchellus Mt. Diablo fairy-lantern	- / - / 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 45-915 m.	**None.** Suitable habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Carex comosa bristly sedge	- / - / 2B.1	Marshes and swamps, coastal prairie, valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta island. 5-1010 m.	**None.** Suitable habitat is not present in the Study Area. Also not known to occur in Alameda County (CNPS 2023).
Centromadia parryi ssp. *congdonii* Congdon's tarplant	- / - / 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 meters. Blooms May through November.	**None.** Suitable habitat is not present in the Study Area.
Chloropyron maritimum ssp. *palustre* Point Reyes salty bird's-beak	- / - / 1B.2	Coastal salt marsh. Usually in coastal salt marsh with Salicornia, Distichlis, Jaumea, Spartina, etc. 0-115 meters. Blooms June through October.	**None.** Suitable habitat is not present in the Study Area. One historic and possibly extirpated occurrence in Alameda marsh near Bay Farm Island (CDFW 2023).
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	- / - / 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Closely related to *C. pungens*. Sandy soil on terraces and slopes. 3-215 meters. Blooms April through August.	**None.** Suitable habitat is not present in the Study Area and this species is considered extirpated from Alameda County (CNPS 2023).
Chorizanthe robusta var. *robusta* robust spineflower	FE / - / 1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 9-245 meters. Blooms April through September.	**None.** Suitable habitat is not present in the Study Area. Currently known populations of this species are restricted to Santa Cruz County (USFWS 2010).
Cirsium fontinale var. fontinale Fountain thistle	FE / SE / 1B.1	Valley and foothill grassland, chaparral, cismontane woodland, meadows and seeps. Serpentine seeps and grassland. 45-185 m.	**None**. Suitable serpentine habitat is not present in the Study Area. Not known from Alameda County (CNPS 2023).
Clarkia franciscana Presidio clarkia	FE / SE / 1B.1	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 20-305 meters. Blooms May through July.	**None.** Suitable serpentine habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Collinsia multicolor San Francisco collinsia	- / - / 1B.2	Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 10-275 m.	**None.** Suitable habitat is not present in the Study Area.
Dirca occidentalis western leatherwood	- / - / 1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. El. 25-425 meters. Blooms January through April.	**None.** Suitable habitat is not present in the Study Area.
Eriogonum luteolum var. *caninum* Tiburon buckwheat	- / - / 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Serpentine soils; sandy to gravelly sites. 0-700 meters. Blooms May through September.	**None.** Suitable serpentine soils are not present within the Study Area.
Eriophyllum latilobum San Mateo woolly sunflower	FE / SE / 1B.1	Cismontane woodland, coastal scrub, lower montane coniferous forest. Often on roadcuts; found on and off of serpentine. 30-610 m.	**None.** Suitable habitat is not present in the Study Area.
Eryngium aristulatum var. hooveri Hoover's button-celery	- / - / 1B.1	Vernal pools. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 1-50 m.	**None.** Suitable vernal pool habitat is not present in the Study Area.
Eryngium jepsonii Jepson's coyote-thistle	- / - / 1B.2	Vernal pools, valley and foothill grassland. Clay. 3-300 meters. Blooms April through August.	**None.** Suitable habitat is not present in the Study Area.
Extriplex joaquinana San Joaquin spearscale	- / - / 1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis spicata*, *Frankenia*, etc. 1-835 meters. Blooms April through October.	**None.** Suitable habitat is not present in the Study Area.
Fissidens pauperculus minute pocket moss	- / - / 1B.2	North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1,024 meters.	**None.** Suitable habitat is not present in the Study Area.
Fritillaria biflora var. *ineziana* Hillsborough chocolate lily	- / - / 1B.1	Cismontane woodland, valley and foothill grassland. Probably only on serpentine; most recent site is in serpentine grassland. 90-170 m.	**None.** Suitable habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Fritillaria liliacea fragrant fritillary	- / - / 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 meters. Blooms February through April.	**None.** Suitable habitat is not present in the Study Area. An occurrence is present less than 2 miles in Mills College, but species population on campus believed to be possibly extirpated (CNDDB 2023).
Gilia capitata ssp. *chamissonis* blue coast gilia	- / - / 1B.1	Coastal dunes, coastal scrub. 3-200 meters. Blooms April through July.	**None.** Suitable habitat is not present in the Study Area.
Gilia millefoliata dark-eyed gilia	- / - / 1B.2	Coastal dunes. 1-60 meters. Blooms April through July.	**None.** Suitable habitat is not present in the Study Area.
Helianthella castanea Diablo helianthella	- / - / 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. El. 45-1,070 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area.
Hemizonia congesta ssp. *congesta* congested-headed hayfield tarplant	- / - / 1B.2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. El. 20-560 meters. Blooms April through November.	**None.** Suitable habitat is not present in the Study Area. Not known from Alameda County (CNPS 2023).
Hesperevax sparsiflora var. brevifolia short-leaved evax	- / - / 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. 0-640 m.	**None.** Suitable habitat is not present in the Study Area.
Hesperolinon congestum Marin western flax	- / - / 1B.2	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 60-400 m.	**None.** Suitable serpentine habitat is not present in the Study Area.
Heteranthera dubia water star-grass	- / - / 2B.2	Marshes and swamps. Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 15-1510 m.	**None.** Suitable habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Hoita strobilina Loma Prieta hoita	- / - / 1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 60-975 meters. Blooms May through October.	**None.** Suitable habitat is not present in the Study Area. Known to occur in Oakland hills but historic occurrence of species is possibly extirpated in Oakland hills and last observed in 1865 (CNDDB 2023). This species presumed extirpated from Alameda and Contra Costa Counties (Lake 2020).
Holocarpha macradenia Santa Cruz tarplant	FT / SE / 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 10-220 meters. Blooms June through October.	**None.** This species is considered extirpated from Alameda County (USFWS 2014).
Horkelia cuneata var. *sericea* Kellogg's horkelia	- / - / 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. 5-215 meters. Blooms April through September.	**None.** Suitable habitat is not present in the Study Area. One historic occurrence of species in Alameda is considered possibly extirpated and last observed in 1894 (CNDDB 2023).
Lasthenia conjugens Contra Costa goldfields	FE / - / 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-450 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area.
Layia carnosa beach layia	FE / SE / 1B.1	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 meters. Blooms March through July.	**None.** Suitable habitat is not present in the Study Area.
Leptosiphon rosaceus rose leptosiphon	- / - / 1B.1	Coastal bluff scrub. 10-140 meters. Blooms April through July.	**None.** Suitable habitat is not present in the Study Area.
Lessingia arachnoidea Crystal Springs lessingia	- / - / 1B.2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. Grassy slopes on serpentine; sometimes on roadsides. 90-200 m.	**None.** Suitable habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Malacothamnus arcuatus arcuate bush-mallow	- / - / 1B.2	Chaparral, cismontane woodland. Gravelly alluvium. 1-735 m.	**None.** Suitable habitat is not present in the Study Area.
Meconella oregana Oregon meconella	- / - / 1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 meters. Blooms March through April.	**None.** Suitable habitat is not present in the Study Area.
Monolopia gracilens woodland woollythreads	- / - / 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, north coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 100-1,200 meters. Blooms February through July.	**None.** Suitable habitat is not present in the Study Area.
Pentachaeta bellidiflora white-rayed pentachaeta	FE / SE / 1B.1	Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 35-610 m.	**None.** Suitable habitat is not present in the Study Area.
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower	- / - / 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 15-160 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area.
Plagiobothrys diffusus San Francisco popcornflower	- / SE / 1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 meters. Blooms March through June.	**None.** Suitable habitat is not present in the Study Area.
Plagiobothrys glaber hairless popcornflower	- / - / 1A	Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-180 meters. Blooms March through May.	**None.** Suitable habitat is not present in the Study Area. This species is also presumed extinct.
Polygonum marinense Marin knotweed	- / - / 3.1	Marshes and swamps. Coastal salt marshes and brackish marshes. 0-10 meters. Blooms April through October.	**None.** Suitable habitat is not present in the Study Area.
Sanicula maritima adobe sanicle	- / SR / 1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 30-240 meters. Blooms February through May.	**None.** Suitable habitat is not present in the Study Area.
Senecio aphanactis chaparral ragwort	- / - / 2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-1020 m.	**None.** Suitable habitat is not present in the Study Area.

Scientific Name **Common Name**	**Listing status* (Federal/ State/CNPS)**	**Habitat Association**	**Potential to Occur in the Study Area**
Spergularia macrotheca var. *longistyla* long-styled sand-spurrey	- / - / 1B.2	Marshes and swamps, meadows and seeps. Alkaline. 0-220 meters. Blooms February through May.	**None.** Suitable habitat is not present in the Study Area.
Streptanthus albidus ssp. *peramoenus* (=*Streptanthus glandulosus* ssp. *glandulosus*) most beautiful jewelflower	- / - / 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 95-1,000 meters. Blooms March through October.	**None.** Suitable habitat is not present in the Study Area. No serpentine is present within the Study Area.
Suaeda californica California seablite	FE / - / 1B.1	Marshes and swamps. Margins of coastal salt marshes. 0-5 m.	**None.** Suitable habitat is not present in the Study Area.
Stuckenia filiformis ssp. *alpina* slender-leaved pondweed	- / - / 2B.2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 300-2,150 meters. Blooms May through July.	**None.** Suitable habitat is not present in the Study Area.
Trifolium hydrophilum saline clover	- / - / 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300 meters. Blooms April through June.	**None.** Suitable habitat is not present in the Study Area.
Triphysaria floribunda San Francisco owl's-clover	- / - / 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. On serpentine and non-serpentine substrate (such as at Pt. Reyes). 1-150 meters. Blooms April through June.	**None.** Suitable habitat is not present in the Study Area.
Viburnum ellipticum oval-leaved viburnum	- / - / 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. El. 215-1,400 meters. Blooms May through June.	**None.** Suitable habitat is not present in the Study Area.

* List of Abbreviations for Species Status follow below: FE = Federal endangered FT = Federal threatened FC = Federal Candidate SC = State Candidate SE = State Endangered (California) ST = State Threatened (California) SR = State Rare (California) SCC = Species of Special Concern FP= Fully Protected References: California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database.	CA Rare Plant Rank 1A = Plants presumed extinct in California and rare/extinct elsewhere 1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California 1B.2 = Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California 1B.3 = Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California 2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

Table C-2. Special-status Wildlife Species

Scientific Name **Common Name**	**Listing status* (Federal/ State)**	**Habitat Association**	**Potential to Occur in the Study Area**
Invertebrates			
Bombus crotchii Crotch bumble bee	- / SC	Coastal areas east to the Sierra-Cascade crest and south into Mexico. Food plant include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*.	**Not expected.** Marginally suitable foraging habitat present in the vicinity of Study Area. No known CNDDB occurrences within 5 miles of Study Area (CDFW 2023).
Bombus occidentalis western bumble bee	- / SC	Open grasslands, shrublands, chaparral, desert margins, including Joshua tree and creosote scrub, and semi-urban settings. Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. Western bumble bee populations in California are currently largely restricted to high elevation sites in the Sierra Nevada and a few records on the northern California coast (Xerces Society et al. 2018). Food plant include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum*.	**None.** The study area is within the historic range of this species; however, it is not within the mapped current range (CDFW 2023). Nearest CNDDB occurrence in Redwood Regional Park in 1966.
Danaus plexippus monarch - California overwintering population (pop. 1)	FC / -	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Closed-cone coniferous forest.	**Not expected.** Overwintering habitat in vicinity of Project area at Corica Golf Course (CDFW 2023) and documented overwintering site by Xerces Society (2023) is Marginally suitable foraging habitat present in the at the Study Area.
Euphydryas editha bayensis Bay checkerspot butterfly	FT / -	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**None.** Suitable habitat is absent in the Study Area. The current range of this species is restricted to Santa Clara County (USFWS 2009).

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Speyeria zerene myrtleae Myrtle's silverspot butterfly	FE / -	Coastal dunes. Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County.	**None.** Suitable habitat is absent in the Study Area. The current range of this species is restricted to Point Reyes (USFWS 2009[2]).
Amphibians			
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	FT / ST	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**None.** Suitable habitat is absent in the Study Area. One historic occurrence in Alameda that is considered extirpated (CDFW 2023).
Rana boylii foothill yellow-legged frog	FT / SE	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	**None.** Suitable habitat is absent in the Study Area.
Rana draytonii California red-legged frog	FT / SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**None.** Suitable habitat is absent in the Study Area.
Reptiles			
Emys marmorata western pond turtle	FC / SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**None.** Suitable habitat is absent in the Study Area.
Masticophis lateralis euryxanthus Alameda whipsnake	FT / ST	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices, or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	**None.** Suitable habitat is absent in the Study Area.
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE/SE, FP	Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	**None.** Suitable habitat is absent in the Study Area.

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Fish			
Acipenser medirostris pop. 1 green sturgeon - southern DPS	FT/ SSC	The green sturgeon ranges from Mexico to at least Alaska in marine waters and is observed in bays and estuaries up and down the west coast of North America. Green sturgeon are believed to spawn in the Rogue River, Klamath River Basin, and the Sacramento River, and rarely occur in the Umpqua River. Green sturgeon appears to occasionally occupy the Eel River and may also be using the Trinity River.	**None.** Suitable habitat is absent in the Study Area.
Eucyclogobius newberryi tidewater goby	FE / SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, requires fairly still but not stagnant water and high oxygen levels.	**None.** Suitable habitat is absent in the Study Area.
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	FT/ -	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	**None.** Suitable habitat is absent in the Study Area.
Spirinchus thaleichthys Longfin smelt	FC / ST	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**None.** Suitable habitat is absent in the Study Area.
Birds			
Agelaius tricolor Tricolored Blackbird	-/ST	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**None.** No known CNDDB occurrences within 5 miles of study area (CDFW 2023). Suitable habitat is absent in the Study Area.
Aquila chrysaetos golden eagle	- / FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**None.** Suitable habitat is absent in the Study Area.

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Asio flammeus short-eared owl	- / SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**None.** Suitable habitat is absent in the Study Area.
Athene cunicularia Burrowing Owl	- / SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Possible.** Recorded occurrences at Bay Farm Island and southeast San Leandro Bay and MLK Jr. Regional Park. Suitable habitat is present in the Study Area and in vicinity of Project site.
Charadrius alexandrinus nivosus western snowy plover	FT / SSC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	**None.** Suitable habitat is absent in the Study Area.
Circus hudsonius northern harrier	- / SSC	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Possible.** Suitable nesting and foraging habitat is present in the Study Area. May occur in passing or nest within Study Area. Nests in grassland and marsh habitat. Marsh habitat occurs within Fan Marsh and Arrowhead marsh nearby.
Coturnicops noveboracensis yellow rail	- / SSC	Shallow brackish and freshwater marshes, wet meadows, and occasionally rice fields. Summer resident in eastern Sierra Nevada in Mono County.	**None.** Suitable habitat is absent in the Study Area.
Elanus leucurus white-tailed kite	- / FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**None (nesting).** Suitable nesting habitat is absent in the Study Area. May occur in passing to forage within study area and vicinity of Fan Marsh and Arrowhead marsh.
Falco peregrinus anatum American peregrine falcon	FD / SD, FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**None (nesting).** Suitable nesting habitat is absent in the Study Area. May forage for prey in the vicinity of the Study Area.

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Geothlypis trichas sinuosa saltmarsh common yellowthroat	- / SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**None.** Suitable habitat is absent in the Study Area.
Haliaeetus leucocephalus Bald eagle	FD / SE, FP	Lower montane coniferous forest, and oldgrowth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**None.** Suitable habitat is absent in the Study Area.
Laterallus jamaicensis coturniculus California black rail	- /ST, FP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**None.** Suitable habitat is absent in the Study Area.
Melospiza melodia pusillula Alameda song sparrow	- / SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**None.** Suitable habitat is absent in the Study Area.
Rallus obsoletus California Ridgway's rail (California clapper rail)	FE / SE, FP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**None.** Suitable habitat is absent in the Study Area.
Rynchops niger black skimmer	- / SSC	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**None.** Suitable habitat is absent in the Study Area.
Setophaga petechia yellow warbler	- / SSC	Riparian forest, riparian scrub, and riparian woodland. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**None.** Suitable habitat is absent in the Study Area.
Sternula antillarum browni California least tern	FE / SE, FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**None.** Suitable habitat is absent in the Study Area.

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Mammals			
Antrozous pallidus pallid bat	- / SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**None.** Suitable habitat is absent in the Study Area.
Corynorhinus townsendii Townsend's big-eared bat	- / SSC	Coniferous forests, deserts, riparian forests, and coastal areas. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**None.** Suitable habitat is absent in the Study Area.
Eumops perotis californicus western mastiff bat	- / SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**None.** Suitable habitat is absent in the Study Area.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	- / SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**None.** Suitable habitat is absent in the Study Area.
Nyctinomops macrotis big free-tailed bat	- / SSC	Primarily across southwestern US north to southern Utah and central Colorado. Low-lying arid areas in Southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**None.** Suitable habitat is absent in the Study Area.
Reithrodontomys raviventris Salt marsh harvest mouse	FE / SE, FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**None.** Suitable habitat is absent in the Study Area.

Scientific Name Common Name	Listing status* (Federal/ State)	Habitat Association	Potential to Occur in the Study Area
Scapanus latimanus parvus Alameda Island mole	- / SSC	Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. Avoids flooded soils.	**None.** Marginal grassland habitat is present in the Study Area. However, Study Area has been heavily disturbed previously, historic known occurrences in Alameda are considered Possibly extirpated and only occur on Alameda island (CDFW 2023).
Sorex vagrans halicoetes salt marsh wandering shrew	- / SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among *Salicornia*.	**None.** Suitable marsh habitat is not present in the Study Area.
Taxidea taxus American badger	- / SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**None.** The study area is not within the current range of this species. The nearest recorded occurrence for this species is from 1930 and over 4 miles east of the Study Area.

*** List of Abbreviations for Federal and State Species Status follow below:** **FE = Federal endangered** **FT = Federal threatened** **FC = Federal candidate**	**SE = State endangered** **ST = State threatened** **SC = State candidate** **SSC = Species of special concern (CDFW)** **FP = Fully protected (CDFW)**
Source: California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database	

References:

California Department of Fish and Wildlife. 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6.

Lake, D. 2020. Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties [web application]. Available at: ebcnps.org/ebrare-plant-database. Accessed July 30, 2020.

Western Monarch Count Resource Center (Xerces Society). 2023. Find an Overwintering Site Near You. Available at: www.westernmonarchcount.org/find-an-overwintering-site-near-you