

# **BIOLOGICAL RESOURCE ASSESSMENT**

## **WILDCAT CANYON FLOW BIKE TRAIL PROJECT**

**EAST BAY REGIONAL PARK DISTRICT, CONTRA COSTA COUNTY, CALIFORNIA**



*Prepared for*

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## Section 1. INTRODUCTION

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Nomad Ecology (Nomad) prepared this Biological Resources Assessment for the proposed Wildcat Canyon Flow Bike Trail Project (project) on behalf of East Bay Regional Park District (District). The project is located in the northwest side of Wildcat Canyon Regional Park, Contra Costa County, California (Figure 1). This report provides an assessment of existing conditions, evaluates habitat suitability for special status plant and wildlife species and sensitive natural communities, analyzes potential project impacts to biological resources, and provides recommendations for impact avoidance and minimization.

### 1.1. PROJECT DESCRIPTION

#### 1.1.1 PURPOSE AND NEED

The purpose of this project is to construct a directional flow bike trail in the northwest portion of Wildcat Regional Park. In its current state, there are no official directional flow bike trails established in this area. The proposed directional flow bike trail would relieve the pressure on other trails within Tilden Regional Park and Wildcat Canyon Regional Park. Construction of this new 1-mile trail along with the designation of directional travel rules on the surrounding trails will create a more predictable and safer environment for all trail users. Additionally, working with the National Interscholastic Cycling Association (NICA) and other non-NICA mountain biker groups, the District will close and restore bootleg trails that have been created and commit this trail user community to assist the District to maintain this trail and others within these two parks.

#### 1.1.2 LOCATION

The location considered for directional flow bike trail installation under this project is the grassland area north of Wildcat Canyon Parkway near the intersection with the existing Mezue Road. The District Trails Program Unit has met in the field with District Stewardship staff to identify a preliminary alignment. The two District departments have identified a feasible trail corridor with minimal to no biological or botanical impacts adjacent to Mezue Road. The alignment chosen will pass through a grazed and weeded grass hillside and provide an alternative to the adjacent existing road that will remain open to hikers and horses and for emergency and maintenance access.

#### 1.1.3 PROJECT DESCRIPTION

This project will involve the installation of a newly created directional flow bike trail in the northwest section of Wildcat Canyon Regional Park approximately 1.86 miles (3 kilometers) southeast of the Alvarado Staging Area. Low impact grading will occur along the proposed directional flow bike trail corridor. No trees or shrubs will be removed.








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Biological Resource Assessment

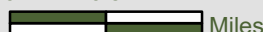
**Legend**

-  Study Area
-  County Boundaries
-  Public Land and Easements

**Figure 1**  
**Project Vicinity Map**  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District

1:63,360

0 0.5 1

 Miles

## Section 2. STUDY METHODS

### 2.1. DEFINITIONS

The following terms were used to evaluate the sensitivity of onsite biological resources and potential impacts of the proposed project. Terms and definitions are derived from the CEQA Guidelines and regulatory agencies, where applicable. A summary of laws, ordinances, and regulations are included in Appendix A.

<b>Study Area</b>	The study area comprises approximately 18.2-acres and consists of a buffered area along the approximate 0.8 mile proposed trail corridor.
<b>Direct Impact</b>	Impacts (or primary effects), which are caused by the project and occur at the same time and place [CEQA Guidelines, Title 14 CCR, Section 15358(a)(1)].
<b>Indirect Impact</b>	Impacts (or secondary effects), which are caused by the project and are later in time or farther removed in distance but are still reasonably foreseeable. These may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems [CEQA Guidelines, Title 14 CCR, Section 15358(a)(2)].
<b>Critical Habitat</b>	Defined by the Endangered Species Act (ESA), as amended (Code of Federal Regulations, Title 50, Section 17), as “a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.” Critical habitat designations are published in the Federal Register. The final boundaries of the critical habitat area are also published in the Federal Register for federally listed species by USFWS and NOAA Fisheries.
<b>DPS</b>	A distinct population segment (DPS) is a vertebrate population or group of populations that are distinct from other populations of the species and significant in relation to the entire species. The ESA provides for listing species, subspecies, or distinct population segments of vertebrate species.
<b>ESU</b>	An evolutionarily significant unit (ESU) is a population or group of populations that is substantially reproductively isolated from other conspecific populations and that represents an important component of the evolutionary legacy of the species. The ESU policy for Pacific salmon defines the criteria for identifying a Pacific salmon population as a distinct population segment (DPS), which can be listed under the ESA.

### 2.2. SIGNIFICANCE CRITERIA

The significance criteria are based in part on the Environmental Checklist (CEQA Guidelines Appendix A [Title 14 CCR, Section 15000-15387]). These criteria are used to determine the extent to which the proposed project would impact sensitive biological resources. The threshold of significance may vary for each species or habitat and is determined by the lead agency. Using these guidelines, the project would result in a significant impact if it would:



- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, *etc.*) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### 2.3. DATA RESOURCES

Background information for listed and special status plant and wildlife species, and sensitive natural communities was compiled through a review of the following resources:

#### U.S. Fish and Wildlife Service (USFWS):

- Information for Planning and Consultation (IPaC) Online System Species List Query (USFWS 2022a) (Appendix E)
- National Wetland Inventory for the Richmond Quadrangle (USFWS 2022b)

#### National Oceanographic and Atmospheric Administration (NOAA Fisheries):

- Endangered and Threatened Species; Establishment of Species of Concern List, Addition of Species to Species of Concern List, Description of Factors for Identifying Species of Concern, and Revision of Candidate Species List Under the Endangered Species Act (NOAA 2004)
- Endangered and Threatened Species; Revision of Species of Concern List, Candidate Species Definition, and Candidate Species List (NOAA 2006)
- West Coast Region Critical Habitat Geodatabase (NOAA 2021)

#### California Department of Fish and Wildlife (CDFW):

- California Natural Communities List (CDFW 2022a)
- State and Federally Listed Endangered, Threatened and Rare Plants of California (CDFW 2022b)
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2022c)
- Special Vascular Plants, Bryophytes, Lichens List (CDFW 2022d)
- Special Animal List (CDFW 2022e)
- California Natural Diversity Database (CNDDB) RareFind 5 Query for the San Francisco North, Oakland West, Oakland East, San Quentin, Richmond, Briones Valley, Petaluma Point, Mare Island, and Benicia USGS 7 ½ Minute Quads (CDFW 2022e) (Appendix D)

**Other Sources:**

- The California Native Plant Society’s Inventory of Rare and Endangered Plants of California (CNPS 2022)
- Consortium of California Herbaria One (CCH1) (CCH1 2022)
- Consortium of California Herbaria Two (CCH2) (CCH2 2022)
- Database of Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties (Lake 2021)
- The Jepson eFlora (JFP 2022)
- The Jepson Manual: Vascular Plants of California (Baldwin et al. 2012)
- A Manual of California Vegetation (Sawyer et al. 2009)
- Contra Costa County Breeding Bird Atlas (Glover 2009)
- Contra Costa County Watershed Atlas (CCCCDD 2003)
- Annotated Checklist of the East Bay Flora (CNPS 2013)

Botanical taxonomy and nomenclature conforms to *The Jepson Manual* (Baldwin et al. 2012) with the exception of recent updates posted on the Jepson eFlora (JFP 2022) website. Common names of plant species are derived from the *Calflora Database* (Calflora 2022). Vegetation descriptions conform to *A Manual of California Vegetation* (Sawyer et al. 2009) and wetland and deepwater habitat classifications conform to *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), where appropriate.

Taxonomy and nomenclature for special status plant species conform to the *Inventory of Rare and Endangered Plants of California* (CNPS 2022) and *Special Vascular Plants, Bryophytes and Lichens List* (CDFW 2022d). Nomenclature for common and special status wildlife conforms to the *Complete List of Amphibian, Reptile, Bird and Mammal Species in California* (CDFW 2016) with taxonomic nomenclature updates conforming to the *Special Animals List* (CDFW 2022e).

## **2.4. IDENTIFICATION OF POTENTIALLY OCCURRING SPECIES**

The identification of species with potential to occur for this Biological Resources Assessment is based on a background review of data sources described in Section 2.3 and Appendices B and C, Nomad’s expertise with the regional wildlife and flora, and habitats present within the study area. This background review resulted in the determination of the potentially occurring special status plant and wildlife species, out of those known from the region.

## **2.5. REGULATORY FRAMEWORK**

The following section summarizes the regulatory framework related to natural resources such as sensitive natural communities and special status plants and animals.

### **2.5.1 SENSITIVE NATURAL COMMUNITIES**

Sensitive Natural Communities are characterized as plant assemblages that are unique in constituent components, restricted in distribution, supported by distinctive edaphic conditions, considered locally rare, potentially support special status plant or wildlife species, and/or receive regulatory protection from municipal, county, state and/or federal entities. The rarity, endangerment, and distribution of natural communities are evaluated using a nature serve rarity ranking calculator through CDFW and CNPS

collaboration. Natural communities with state ranks of S1<sup>1</sup>, S2<sup>2</sup>, and S3<sup>3</sup>, which, are considered Sensitive Natural Communities and to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2022a). Outside of state ranking designations, the regulatory framework that protects other natural communities that may be considered sensitive are derived from local, state, and federal laws and regulations including Section 10 of the federal Rivers and Harbors Act, sections 401 and 404 of the federal Clean Water Act, Section 1600 et seq. of the California Fish and Game Code, Section 15065 of the CEQA guidelines, and various other city or county codes. Implementation and enforcement of these regulations are conducted by their respective regulatory entities such as the U.S. Army Corps of Engineers, California Regional Water Quality Control Board, California Department of Fish and Wildlife, lead agency, and/or various cities or counties.

### 2.5.2 SPECIAL STATUS SPECIES

Special status plant and wildlife species are defined as those species listed as threatened or endangered, are proposed or candidates for listing, or are designated as fully protected species under one or more of the following regulatory statutes: Federal Endangered Species Act (ESA), as amended (Code of Federal Regulations, Title 50, Section 17), California Endangered Species Act (CESA) (California Code of Regulations Title 14, Section 670.5), California Fish and Game Code (Sections 1901, 2062, 2067, 3511, 4700, 5050 and 5515) and the Native Plant Protection Act (NPPA) of 1977. Special status species may also include locally rare species defined by CEQA guidelines 15125(c) and 15380, which may include species that are designated as sensitive, declining, rare, locally endemic or as having limited or restricted distribution by various federal, state, and local agencies, organizations, and watchlists.

The California Native Plant Society (CNPS) has developed and maintains an inventory of Rare, Threatened and Endangered plants of California. This information is published in the Rare Plant Inventory of Rare and Endangered Vascular Plants of California (CNPS 2022). The rarity ranking contained in the CNPS inventory is endorsed by the CDFW and effectively serves as and effectively serves as CDFW's California Rare Plant Rank (CRPR) /rarity ranking (CDFW 2022c, d). The following identifies the definitions of the CNPS California Rare Plant Ranks:

- Rank 1A: Plants presumed to be extinct in California;
- Rank 1B: Plants that are rare, Threatened, or Endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Plants that are rare, Threatened, or Endangered in California, but are more common elsewhere;
- Rank 3: Plants about which more information is needed (a review list);
- Rank 4: Plants of limited distribution (a watch list).

California Rare Plant Rank 1B and 2 species are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code. As part of the CEQA process, such species should be fully considered, as they meet the definition of Threatened or Endangered under the NPPA and

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<sup>1</sup> S1 = Critically imperiled; at very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

<sup>2</sup> S2 = Imperiled; at high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

<sup>3</sup> S3 = Vulnerable; at moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

Sections 2062 and 2067 of the California Fish and Game Code. California Rare Plant Rank 3 and 4 species are considered to be either plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2001, CNPS 2022), as some of these species may meet NPPA and CESA criteria as Threatened or Endangered.

The status of these species is based on their rarity and endangerment throughout all or portions of their range. Such species are referred to as special status species or “target species” herein.

### 2.5.3 LOCALLY RARE PLANT SPECIES

In addition to the designations described above, CEQA requires that impacts to “resources that are rare or unique to that region” be evaluated (CEQA Guidelines 15125[c]). This includes, but is not limited to, botanical resources that are peripheral populations, disjunct subpopulations, sensitive, declining, or have a restricted distribution. These are informal terms that refer to those species that might be declining or be in need of concentrated conservation actions to prevent decline or extirpation but have no legal protection of their own. Also, CEQA Guidelines Section 15380 states “a species not included in any listing...shall nevertheless be considered to be rare or Endangered if the species is likely to become Endangered within the foreseeable future throughout all or a significant portion of its range and may be considered Threatened as that term is used in the FESA.”

The East Bay chapter of CNPS since 1989 has developed and maintains a Database of Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties which tracks populations of locally rare and statewide rare plants which have limited distribution in Alameda and Contra Costa counties, including many that reach their range limit in these two counties (Lake 2021). The following identifies rarity rankings in the Database of Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties:

- \*A: Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies, or by state CNPS (includes \*A1, \*A1x, and \*A2 species)
- A1: Species known from two or fewer botanical regions in Alameda and Contra Costa Counties, either currently or historically (includes \*A1 and A1 species)
- A1x: Species previously known from Alameda or Contra Costa Counties, but now believed to have been extirpated, and no longer occurring here (includes \*A1x and A1x species)
- A1?: Species possibly occurring in Alameda or Contra Costa counties but there are questions about their identification or location
- A2: Species currently known from three to five regions in the two counties, or, if more, meeting other important criteria such as rare statewide, small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc. (includes \*A2 and A2 species)
- B: A High-Priority Watch List: Species currently known from 6 to 9 regions in the two counties, or, if more, meeting other important criteria as described above for A2
- C: A Second-Priority Watch List: Species currently known from 10 to 15 regions in the two counties, but potentially threatened if certain conditions persist such as over-development, water diversions, excessive grazing, and/or weed or insect invasions, etc.

All A-ranked species, both locally rare and statewide rare, should be considered under CEQA guidelines.

## 2.6. PERSONNEL AND FIELD INVESTIGATION

Nomad senior wildlife biologist William Webb conducted a reconnaissance-level site visit of the study area on May 9, 2022. While completing that task, Nomad personnel made efforts to document the biological resources present in the study area. Those efforts included searching for animals while walking throughout the study area and making observations from stationary observation points. All proposed impact areas and vegetation communities within the study area were visited and evaluated for their potential to support sensitive biological resources during this reconnaissance-level visit.

Protocol-level rare plant surveys were conducted by Nomad Ecology senior botanists Shannon Still (SS) and Adam Chasey (AC). These surveys were conducted during the months of March, April, May, July, and September of 2022. Table 1 details the dates, survey targets, and personnel for these studies. This report was prepared by Mr. Webb and Mr. Chasey.

**Table 1. 2022 Survey Effort Details for Target Special Status Plant Species**

SURVEY TIMING		TARGETS	PERSONNEL
Month	Day		
March	7	bent-flowered fiddleneck California androsace fragrant fritillary Oregon meconella	AC
April	5	Diablo helianthella coast iris Mount Diablo cottonweed	AC
May	5	bristly leptosiphon two-fork clover	AC
July	25	Jepson's coyote thistle Santa Cruz tarplant	SS
September	16	woolly-headed lessingia	AC

The purpose of the rare plant surveys was to conduct an inventory of vascular plants of the study area to document occurrences of rare, threatened or endangered species and other special status plants; as well as sensitive natural communities. All vegetation communities within the study area were visited and evaluated for their potential to support sensitive botanical resources. All surveys were conducted on foot and started at the western end of the area progressing northeast along one side of the study area and returning to the southwestern end on the other side. March, April, May, July, and September surveys covered the entire study area. All plant species in bloom, or otherwise recognizable, were identified to a level necessary (floristic) to determine their regulatory status. During these surveys, an inventory of plant species observed was recorded (Appendix G). Vegetation mapping was conducted concurrently with rare plant surveys.

Botanical surveys were conducted in accordance with the California Native Plant Society's *Botanical Survey Guidelines* (CNPS 2001), California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2009), and the U.S. Fish and Wildlife Service's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000).

## 2.7. RESOURCE DOCUMENTATION AND MAPPING

Field data, including locations of special status plant species occurrences and sensitive natural communities, and vegetation community reference points were collected using Backcountry Navigator Pro or Gaia GPS on Android or Apple devices. Location accuracy on these devices was improved by Garmin GLO 2 Bluetooth GPS receivers.

### 2.7.1 VEGETATION MAPPING

Vegetation communities were characterized and mapped based on *A Manual of California Vegetation* (Sawyer et al. 2009). Vegetation types were mapped at the association level, where possible, and at the alliance level at a minimum. Mapping identified CDFW sensitive natural communities if present. Stand quality of native grassland polygons was ranked based on relative cover of native grasses using the District's 3-category ranking system (Low, Medium, and High). A rapid, stand-level assessment of native grass cover was made for each native grass stand encountered and assigned a rank based on the following category definitions: Low = 10-19% relative cover; Medium = 20-29% relative cover; High = > 30% relative cover. However, none of the native grass stands encountered in the study area were of sufficient size or contained high enough cover of native grasses (minimum 10% relative cover) to qualify as native grassland.

Data and notes collected in the field were used to heads-up digitize vegetation communities (at 1:2,000 scale) using a desktop computer Geographic Information System (GIS) platform operating ESRI ArcGIS 10.7 for creating polygons and populating attribute tables. Minimum mapping units for vegetation communities are approximately 0.10 acre.

## 2.8. REFERENCE SITES AND HERBARIUM SPECIMENS

To ensure the timing of botanical surveys coincided with the flowering phenology of the target species, reference populations and collection dates of herbaria specimens were examined. Known populations of eight target species were visited at reference sites with similar characteristics to the study area such as habitat, topography, and climate to determine appropriate survey timing. Table 2 depicts the details of reference population observations and provides an optimal survey window in which surveys for the subject taxon should be completed by, based on observed phenology. For the remaining target species for which reference populations were not visited, examination of herbaria specimens was performed using the Consortium of California Herbaria 1 and 2 Databases (CCH1 2022; CCH2 2022). The purpose of this analysis was to ensure survey timing corresponds with flowering and reproductive maturation since plant species are typically collected at peak flowering phenology.

**Table 2. Reference Population Observation Details**

SPECIES NAME / COMMON NAME	DATE VISITED	LOCATION	CNDDDB OCCURRENCE (Y/N)	PRESENT (Y/N)	# OF INDIVIDUALS	TIMEFRAME TO CONDUCT SURVEY
<b>FEDERALLY AND/OR STATE LISTED AND CALIFORNIA RARE PLANT RANK SPECIES</b>						
<i>Holocarpha macradenia</i> Santa Cruz tarplant	7/25/22	Wildcat Canyon, Contra Costa County	Yes (EONDX # 7419)	Yes	100's	5 weeks
<b>CALIFORNIA RARE PLANT RANK SPECIES</b>						
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	3/18/2022	Briones Regional Preserve, Contra Costa County	Yes (EONDX # 55740)	Yes	75	4-6 weeks



SPECIES NAME / COMMON NAME	DATE VISITED	LOCATION	CNDDDB OCCURRENCE (Y/N)	PRESENT (Y/N)	# OF INDIVIDUALS	TIMEFRAME TO CONDUCT SURVEY
<i>Androsace elongata</i> subsp. <i>acuta</i> California androsace	3/5/2022	Rancho Los Mochos, Alameda County	N/A	Yes	200	4 weeks
<i>Eryngium jepsonii</i> Jepson's button thistle	7/1/2022	Gudde Ridge, Contra Costa County	No	Yes	~750	6 weeks
<i>Fritillaria liliacea</i> fragrant fritillary	2/17/2022	Bunker Hill SFUC Peninsula, San Mateo County	Yes (EONDX # 13989)	Yes	1,000's	6 weeks
<i>Helianthella castanea</i> Diablo helianthella	3/18/2022	Briones Regional Preserve, Contra Costa County	Yes (EONDX # 60521)	Yes	10	4 weeks
<i>Leptosiphon aureus</i> bristly leptosiphon	3/17/2022	Pleasanton Ridge, Alameda County	N/A	Yes	~3,000	7 weeks
<i>Meconella oregana</i> Oregon meconella	3/22/2022	Gudde Ridge, Contra Costa County	Yes (EONDX # 52604)	Yes	350	3 weeks
<i>Micropus amphibolus</i> Mount Diablo cottonweed	4/13/2022	Franz Valley School Road, Napa County	NA	Yes	50	5-7 weeks

For target species that did not have accessible reference populations or were not visited, an estimation of blooming periods was attained by averaging the collection dates of herbarium specimens by month (CCH1 2022; CCH2 2022). Duplicate collections and specimens with label information lacking a collection month were not included in the averages. Herbaria specimen collection dates and corresponding survey timing are presented in Table 3. All the species appearing in Table 3 have peak blooming periods during the months of April, May, or September and match the months during which botanical surveys were conducted.

**Table 3. Herbaria Specimen Collection Dates and Correspondence of Survey Timing**

SPECIES NAME / COMMON NAME	HERBARIA SPECIMEN COLLECTIONS AVERAGED BY MONTH											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>FEDERALLY AND/OR STATE LISTED AND CALIFORNIA RARE PLANT RANK SPECIES</b>												
<i>Trifolium amoenum</i> two-fork clover	5%	0%	0%	5%	<b>55%</b>	30%	5%	0%	0%	0%	0%	0%
<b>CALIFORNIA RARE PLANT RANK SPECIES</b>												
<i>Iris longipetala</i> coast iris	3%	3%	23%	<b>37%</b>	26%	4%	1%	0%	1%	1%	0%	0%
<i>Lessingia hololeuca</i> woolly-headed lessingia	1%	0%	0%	1%	0%	2%	10%	14%	<b>47%</b>	24%	0%	0%

Note: Shaded areas indicate months when botanical surveys were conducted. Bolded numbers denote peak period(s) for survey. Species flowering phenology represented as a percent (%) by month, percentages are rounded; months where collection dates have not been reported are designated as 0%.

## 2.9. LIMITATIONS

Based on the timing of this assessment, not all potentially occurring special status plant, fish or wildlife species can be conclusively determined to be absent. However, determinations of presence/absence within the study area were possible for: (1) specific special status plant species that would be identifiable during

the March, April, May, July, and September 2022 surveys; and (2) the direct observation or presence of diagnostic sign for wildlife species. Negative findings during site assessments or focused surveys may not indicate absence unless field surveys conform to agency approved protocols.

Based on the timing of the surveys, all plant species growing within the study area may not have been observed due to varying flowering phenologies and life forms, such as bulbs, biennials, and annuals. Annuals may be absent in some years due to annual variations in temperature and rainfall, which influence germination and plant phenology. Colonization of new populations within an area may also occur from year to year.

Since vegetation types are based on samples from a single year, and their associate species may be subject to change if additional data are collected, annual species dominance may change depending on the sample season or year. The phrase “in part” is used to signify that vegetation descriptions may include additional annual species present if surveyed during other seasons or years. Other potentially dominant species within vegetation communities on site may be present during other times of the year.

The CNDDDB tracks user-submitted occurrences of all special status species in California and is used extensively as a reference for regulatory and planning purposes (CDFW 2022e). This database may substantially under-represent actual densities of species, particularly for species that are difficult to detect and for areas that are in private land ownership and have not been surveyed. It is also likely to under-represent densities of species that are not prominent in regulatory permitting or environmental planning settings.

Several factors constrained the biologists’ ability to identify all of the wildlife species that occur within the study area. Songbirds are most easily detected in the early morning or late evening, rather than during other times of the day. Similarly, owls and bats are most easily detected at night. Due to the scope of work, biologists were only on site for a short period of time to assess the general habitat within the study area and could not be present during all the optimal times for wildlife detection. Finally, one reconnaissance visit is not sufficient for identifying all wildlife that may winter, breed, forage, or migrate through the study area.

The proposed activities and work areas evaluated in this report are based on the study area provided by the District. Significant changes in the project design may warrant further analysis.

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## Section 3. ENVIRONMENTAL SETTING

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### 3.1. SETTING

#### 3.1.1 REGIONAL SETTING

The study area is located within the Rancho El Sobrante land grant as shown on the Richmond USGS topographic quadrangle (Figure 2). The study area is within the Central Coast Subregion of the California Floristic Province (Baldwin et al. 2012). Wildcat Canyon is in the Wildcat Creek watershed (USGS 2022).

The study area is located in the East Bay Terraces and Alluvium subsection of the Central California Coast Section (USDA 1997) as described in the *Ecological Subregions of California* (Ecoregion; USDA 1997)<sup>4</sup>. This subsection is described in detail below.

#### East Bay Terraces and Alluvium

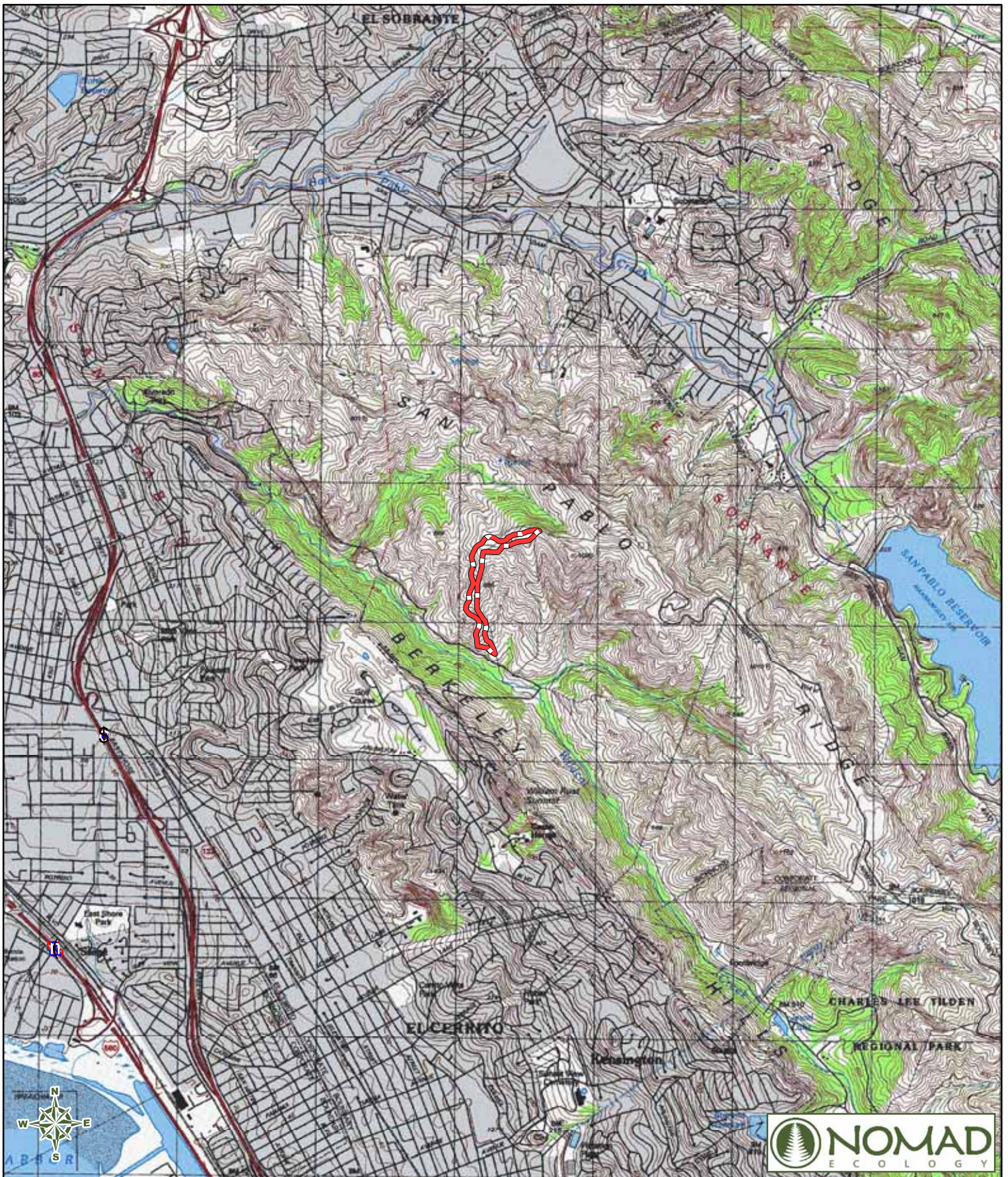
The East Bay Terraces and Alluvium subsection is on an alluvial plain located between the East Bay Hills and San Francisco Bay. It extends from San Pablo Bay southeast to the Santa Clara Valley. The Hayward Fault runs long its northeast edge. The alluvial plain is mostly gently sloping to nearly level alluvial fans. Hills projecting above the fans are steep to moderately steep and elevations range from sea-level to about 600 feet on hills along the Hayward Fault. Late Quaternary alluvium predominates in this subsection. A few small areas of Quaternary marine sediments exist and there are a few hills of Franciscan formation rocks, both along the Hayward and others surrounded by alluvium. Fluvial erosion is the main geomorphic process in this subsection. Fluvial deposition is an important process on recent floodplain and alluvial fans, but most of the stream sediments are washed across the alluvial plain to estuaries of the San Francisco – San Pablo Bay system (USDA 1997).

Mean annual precipitation is about 20 to 30 inches, practically all of which is rain. Mean annual temperatures range from 52° to 56°F and the mean freeze-free period is about 250 to 275 days. Runoff is rapid from the hills but slow across alluvial plains. All but the larger streams are dry through most of the summer and natural lakes are absent. This subsection is greatly modified by marine influence (USDA 1997).

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<sup>4</sup> A Manual of California Vegetation (MCV) (Sawyer et al. 2009) defines the currently recognized method of vegetation classification and mapping in California, which is accepted by CNPS and CDFW. This methodology is used to determine the rarity and endangerment of California vegetation types that can result in a sensitive natural communities designation for specific vegetation types. The Ecological Subregions of California (Ecoregion; USDA 1997) provide the boundaries used in Sawyer et al. (2009) and are the basis for describing regional variation in California alliance descriptions in the MCV .






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Legend

 Study Area

**Figure 2**  
**Project Location on USGS Topographic Map**  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District

1:36,000

0 1,500 3,000

 Feet



### **3.1.3 LOCAL SETTING**

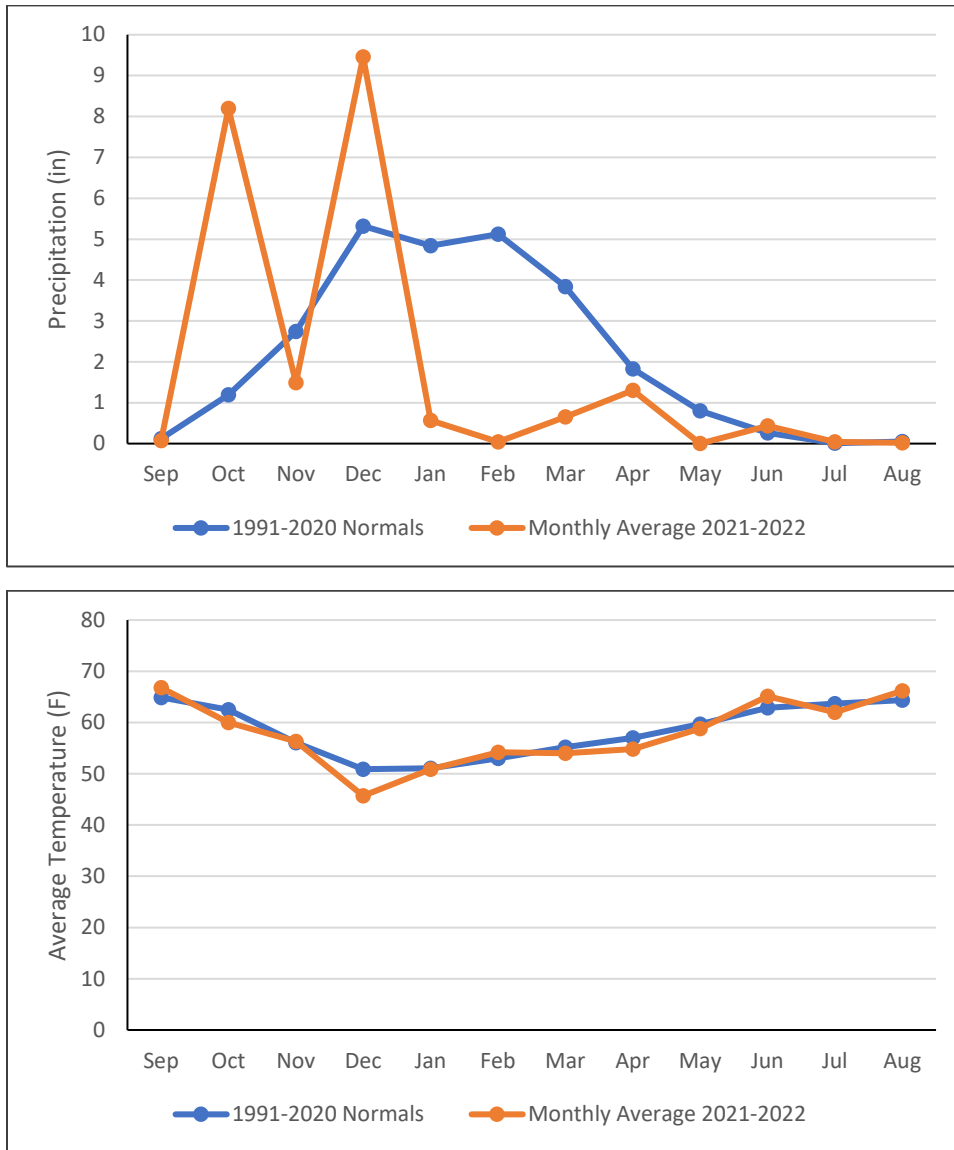
The 18.2-acre study area includes a proposed directional flow bike trail. The study area roughly parallels the northwestern edge of the Mezue Trail east of Wildcat Creek Trail and west of the intersection of the Mezue Trail with the Leonard's Trail (Figure 1 and 2). The study area runs parallel to the topographic contours of the site and forms a roughly linear shape with slight curvature. The study area ranges between 130 to 390 feet (39.6 to 118.9 meters) in width along its length, except where the footprint tapers to sharp points at the northern and southern ends. The study area crosses the Mezue Trail and runs along the southeastern border of the Mezue Trail approximately 1,312 feet (400 meters) from the intersection of the Mezue Trail and the Leonard's Trail. The exact trail location as proposed within the study area defined above may vary as project planning nears completion, however the study area for the Biological Resources Assessment is wide enough to accommodate these refinements. Photos of the study area are included in Appendix F.

#### **Topography**

The topography of the study area is characterized by mostly gentle to steep west- to south-facing slopes on the western face of San Pablo Ridge that increase in elevation towards the northeastern end of the study area (Figure 2). Portions of the study area follow the tops of ridgelines where the topography is gentler. At its northeastern end, the study area tops over the ridge and is on a very gentle east-facing slope for approximately 290 feet (88.4 meters). Elevations range from approximately 410 feet (125 meters) at the southwestern end of the study area to approximately 925 feet (281.9 meters) at its apex near the northeastern end.

#### **Climate**

Figure 3 shows total precipitation (inches) and average monthly temperature (F) from September 2021 to August 2022 compared to 30-year Normals from 1991-2020. Weather data was collected from the El Cerrito 0.3 NW, Richmond, and Oakland North NOAA weather stations, which are the closest stations collecting relevant data (NOAA 2022). While temperature ranges during the 2021-22 period were similar to 30-year Normals, precipitation totals were much higher than average in October and December due to two large storm events but were below average for the remainder of the rainy season.



**Figure 3. Local Precipitation and Temperature Against 30-Year Normals**

**Geology and Soils**

A total of two geology mapping units are located within the study area (Graymer 2000; Figure 4; Table 4). The symbol column in this table refers to the abbreviation for these mapping units used in the geologic map. Geology units underlying the study area include mostly Orinda Formation of the late Miocene and smaller parts unnamed sedimentary and volcanic rocks of the late Miocene (Table 4).

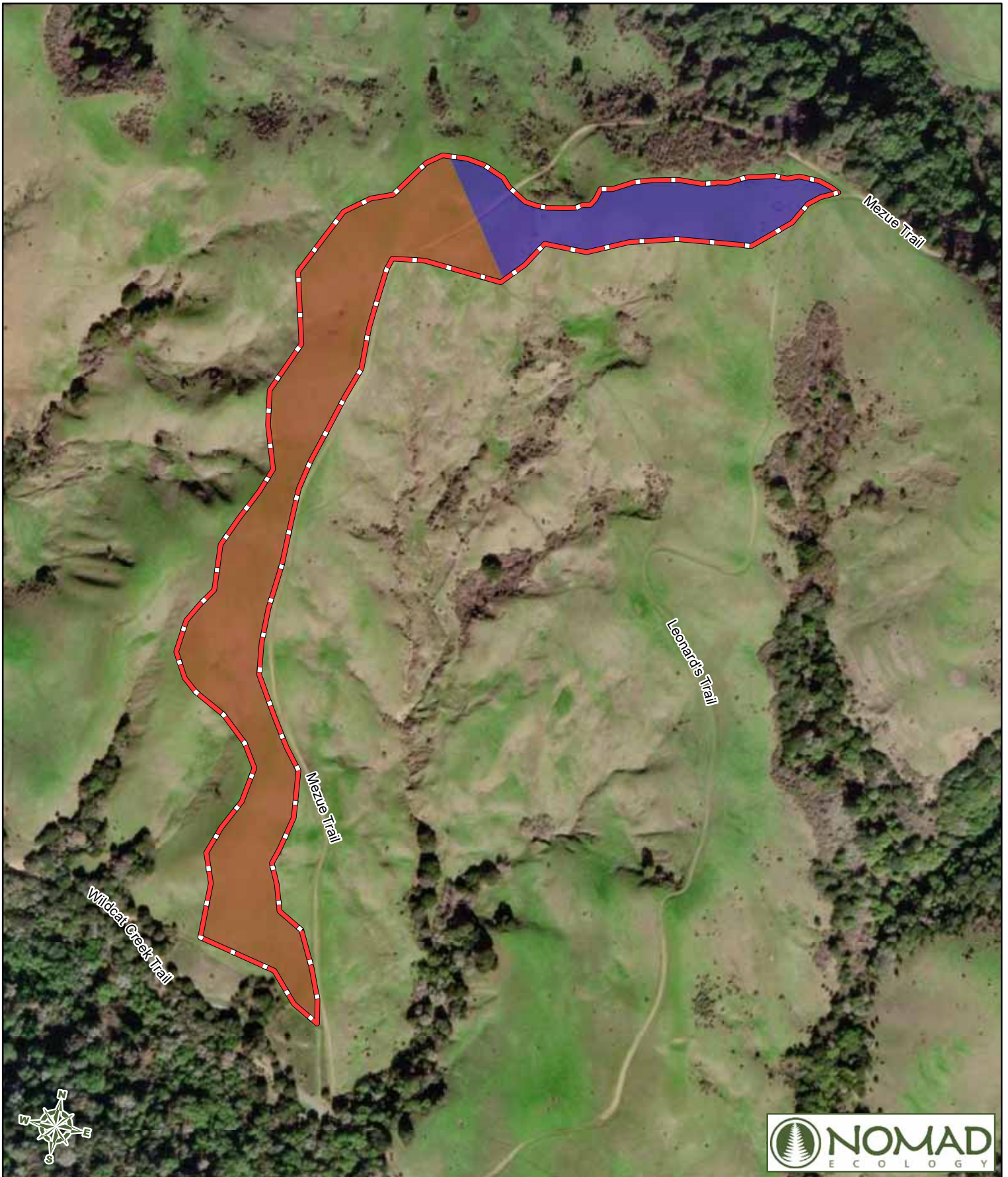
**Table 4. Geology Units in the Study Area**

SYMBOL	SOIL MAPPING UNIT	ACRES IN STUDY AREA
Tor	Orinda Formation (late Miocene)	13.5
Tus	Unnamed sedimentary and volcanic rocks (late Miocene)	4.7
<b>Total</b>		<b>18.2</b>

Four soil mapping units are located within the study area (USDA 2022; Figure 5; Table 5). The symbol column in this table refers to the abbreviation for these mapping units used in the soil survey. None of the soil mapping units are considered hydric. Los Osos soils are well-drained soils underlain by soft, fine-grained sandstone and shale, while Los Gatos soils are well-drained soils underlain by interbedded sedimentary rock. Millsholm soils formed from interbedded shale and fine-grained sandstone and Tierra soils formed in materials weathered from sedimentary terrace deposits (USDA 1977).

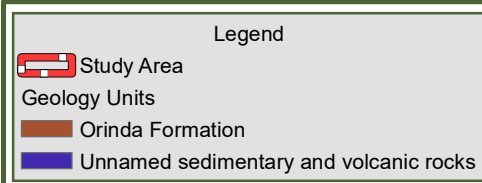
**Table 5. Soil Mapping Unit Characteristics in the Study Area**

SYMBOL	SOIL MAPPING UNIT	ACRES IN STUDY AREA	DRAINAGE CLASS	PERMEABILITY	RUNOFF	HYDRIC
LeF	Los Gatos loam, 30 to 50 percent slopes	0.6	Well Drained	Moderate	Rapid to Very Rapid	No
LhF	Los Osos clay loam, 30 to 50 percent slopes	8.6	Well Drained	Slow	Very High	No
MeG	Millsholm loam, 20 to 60 percent slopes, moist	8.3	Well Drained	Moderate	Low to Very High	No
TaE	Tierra loam, 15 to 30 percent slopes	0.7	Moderately Well Drained	Very Slow	Slow to Rapid	No
<b>Total</b>		<b>18.2</b>				

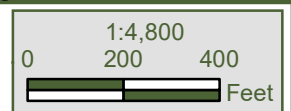


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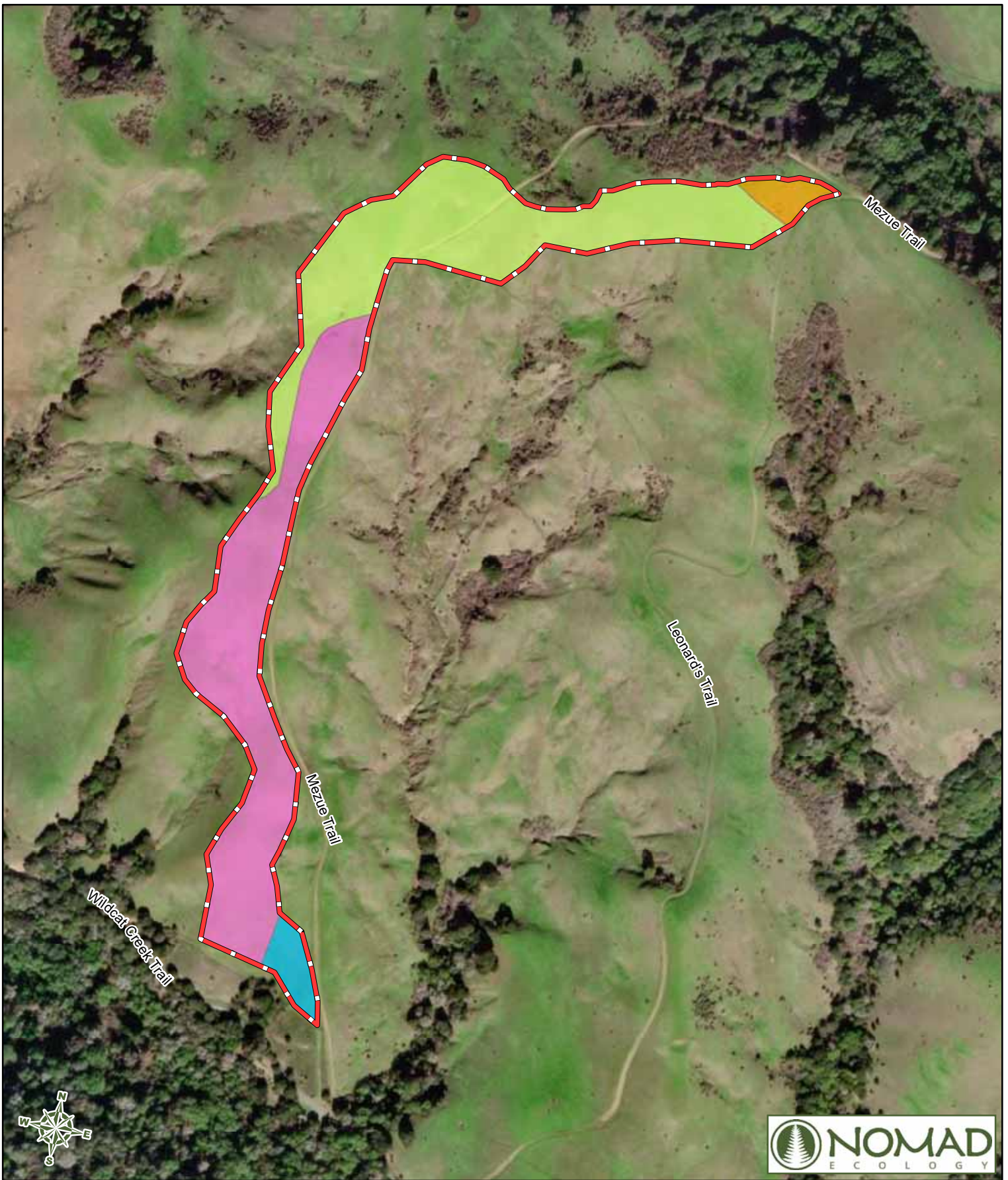


**Figure 4**  
**Geology Units in the Study Area**  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: EBRPD, Graymer 2000










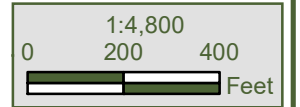
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Legend	
	Study Area
	Los Osos clay loam
	Millsholm loam
	Los Gatos loam
	Tierra loam

**Figure 5**  
**Soil Mapping Units in the Study Area**  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: EBRPD, USDA 2022

### Hydrology Characteristics

Hydrology onsite is influenced by precipitation, surface water runoff, geologic stratigraphy, topography, soil permeability, and plant cover. The entire study area drains generally to the southwest into Wildcat Creek, which itself flows northwest and empties into San Pablo Bay just west of the city of San Pablo. A small portion of the study area at the northeastern-most end drains south into an unnamed tributary to Wildcat Creek. No drainages cross the study area, although a grassy upland swale is in the southern part of the study area at approximately 450 feet (137.2 meters). An Aquatic Resources Delineation technical memorandum (Nomad Ecology 2022; Appendix H) determined that this feature is not a wetland regulated by the United States Army Corps of Engineers, California State Water Resources Control Board, or Regional Water Quality Control Board. Similarly, it was determined to not be a stream regulated by CDFW.

### Land Use

The study area is within Wildcat Regional Park. The primary land-uses include cattle grazing and recreation in the form of hiking and biking. The urbanized areas of El Cerrito and Richmond lie to the west of this portion of the park which extends northwest and southeast for several miles. The park abuts portions of East Bay Municipal Water District's San Pablo Reservoir watershed lands to the east of the study area. Two abandoned Nike Missile Sites are located on San Pablo Ridge to the east of the study area, and the abandoned site of the Belgum Sanitarium is located approximately 1 mile west-northwest of the study area.

## 3.2. VEGETATION COMMUNITIES AND LAND COVER TYPES

Vegetation communities in the study area include Wild Oats and Annual Brome Grassland, Soft Chess – Long-Beaked Filaree Fields, Italian Thistle – Milk Thistle Fields, Poison Hemlock Patches, and California Poppy – Lupine Fields (Table 6). The spatial distribution of vegetation types within the study area are depicted in Figure 6. Rapid stand-level assessments of native grass cover was made for each native grass stand encountered and assigned a rank based on the District's 3-category ranking system: Low = 10-19% relative cover; Medium = 20-29% relative cover; High = > 30% relative cover. However, none of the native grass stands encountered in the study area were of sufficient size or contained high enough cover of native grasses (minimum 10% relative cover) to qualify as native grassland.

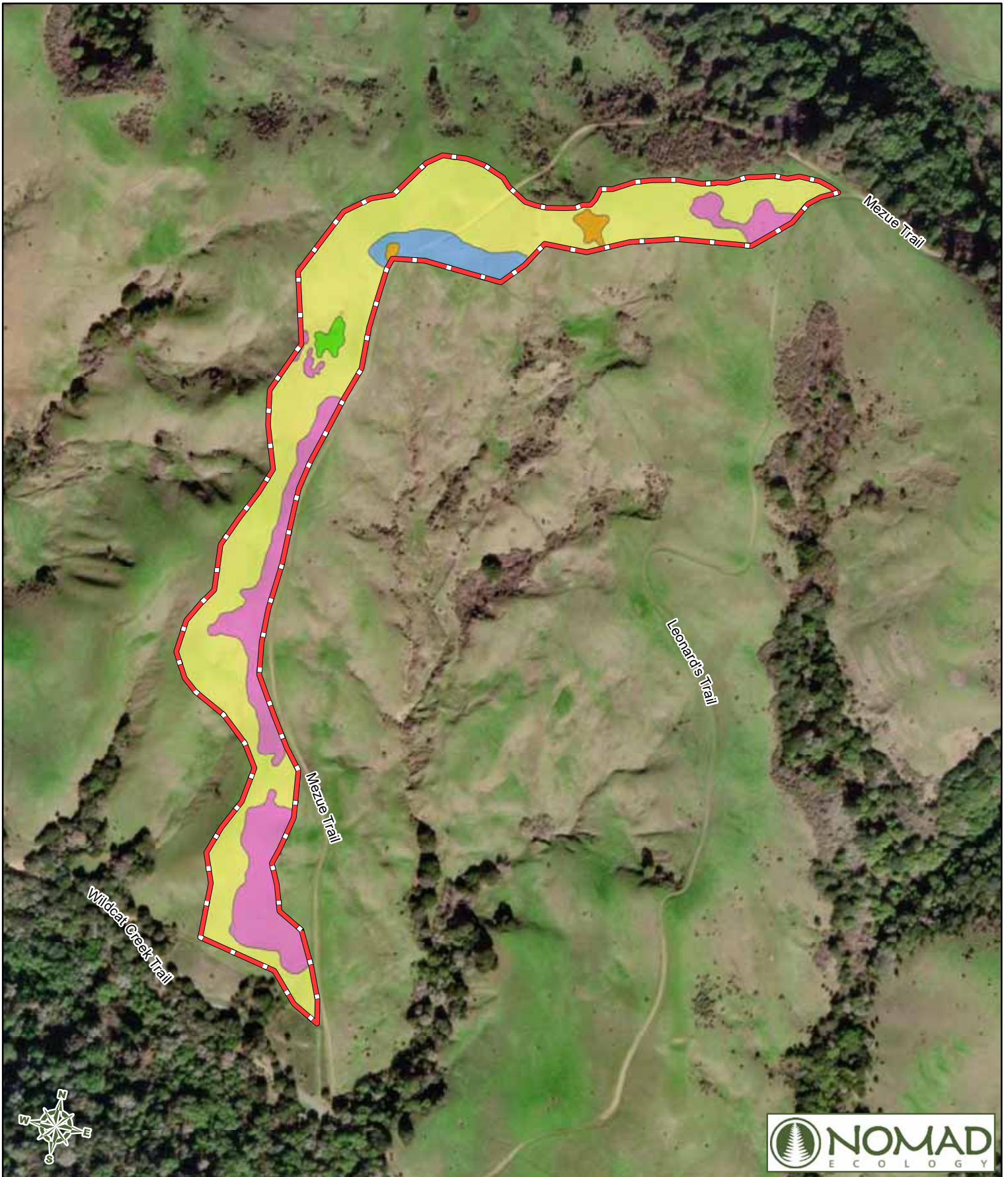
**Table 6. Vegetation Communities in the Study Area**

VEGETATION COMMUNITY	AREA (ACRES)
Wild Oats and Annual Brome Grasslands	12.9
Soft Chess – Long-Beaked Filaree Fields	1.0
Italian Thistle – Milk Thistle Fields	3.9
Poison Hemlock Patches	0.2
California Poppy – Lupine Fields	0.2
<b>Total</b>	<b>18.2</b>

This section describes vegetation on-site utilizing three vegetation classification systems: *A Manual of California Vegetation, Second edition* (MCV; Sawyer et al. 2009), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *California Vegetation* (Holland and Keil 1995) Holland (1986) and Holland and Keil (1955) provide a generalized natural community-level descriptions for natural communities present within the study area. More detailed descriptions of each natural community-level are provided using MCV's (Sawyer et al. 2009) vegetation classification system based on field observations. MCV vegetation types are listed in the *California Natural Communities List* (CDFW 2022a).

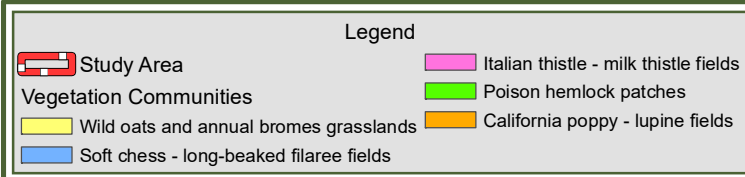
Table 7 relates the MCV vegetation types and Holland (1986) or Holland and Keil (1995) types identified within the study area to the *CNPS Inventory of Rare and Endangered Plants of California* (CNPS 2001) and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The codes used in Table 7 reflect those associated with the *California Natural Communities List* (CDFW 2022a) as well as Holland (1986) types.



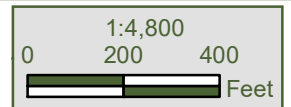


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**Figure 6**  
Vegetation Communities  
in the Study Area



Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District

Sources: EBRPD, Nomad Ecology LLC

**Table 7. Vegetation Community Classification Systems Comparisons**

TERRESTRIAL COMMUNITIES <sup>2</sup>	CALIFORNIA VEGETATION <sup>1</sup>	CNPS INVENTORY <sup>3</sup>	WETLANDS & DEEPWATER HABITATS <sup>4</sup>
<b>UPLAND HERBACEOUS DOMINATED VEGETATION TYPES</b>			
Non-Native Grassland (42200)	<i>Avena spp. - Bromus spp.</i> Herbaceous Semi-Natural Alliance (Wild Oats and Annual Brome Grasslands) (42.027.00) <i>Bromus hordeaceus – Erodium botrys</i> Herbaceous Semi-Natural Association (Soft Chess – Long-Beaked Filaree Fields) (42.026.09)	Valley and Foothill Grassland	Upland
Ruderal (Holland and Keil 1995)	<i>Conium maculatum</i> Herbaceous Semi-Natural Alliance (Poison Hemlock Patches) (42.013.00) <i>Carduus pycnocephalus – Silybum marianum</i> Provisional Herbaceous Semi-Natural Association (Italian Thistle – Milk Thistle Fields) (42.013.01)	Valley and Foothill Grassland	Upland
Wildflower Fields (42300)	<i>Eschscholzia californica - Lupinus spp.</i> Herbaceous Alliance (California Poppy - Lupine Fields) (43.200.00)	Valley and Foothill Grassland	Upland

<sup>1</sup> Terrestrial Natural Communities of California (Holland 1986) and California Vegetation (Holland and Keil 1995)

<sup>2</sup> A Manual of California Vegetation (Sawyer et al. 2009) and California Natural Communities List (CDFW 2022a)

<sup>3</sup> CNPS Inventory of Rare and Endangered Plants of California Habitat Types (CNPS 2001)

<sup>4</sup> Classification of Wetlands & Deepwater Habitats of the U.S. (Cowardin et al. 1979)

### 3.2.1 UPLAND HERBACEOUS DOMINATED VEGETATION TYPES

#### Non-Native Grassland

Non-native grassland is dominated by a sparse to dense cover of non-native grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands as a result of human disturbance (Holland 1986). However, where not completely outcompeted by weedy non-native plant species, scattered native wildflower species and native perennial grass species considered remnants of the original vegetation may also be common. This community occurs on fine-textured, usually clay soils, which are moist or waterlogged during the winter rainy season and very dry during the summer and fall. Germination occurs with the onset of the late fall rains while growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer and fall dry season, persisting as seeds. This community usually occurs below 3,000 feet but reaches 4,000 feet in the Tehachapi Mountains and interior San Diego County, and intergrades with coastal prairie along the Central Coast.

Non-native grassland is represented in the study area by three MCV types: *Avena spp. - Bromus spp.* Herbaceous Semi-Natural Alliance, *Bromus hordeaceus – Erodium botrys* Herbaceous Semi-Natural Alliance, and *Carduus pycnocephalus – Silybum marianum* Provisional Herbaceous Semi-Natural Association, both described below.

#### Wild Oats and Annual Brome Grasslands (*Avena spp. - Bromus spp.* Herbaceous Semi-Natural Alliance)

As described, oats (*Avena spp.\**), annual bromes (*Bromus spp.\**), false brome (*Brachypodium distachyon\**), and/or hare barley (*Hordeum murinum\**) is dominant or co-dominant with other non-natives in the herbaceous layer (Sawyer et al. 2009). Emergent trees and shrubs may be present at low cover. Herbs are generally less than 4 feet (1.2 meters) in height and cover is open to continuous (Sawyer et al. 2009).



According to membership rules for grasslands to be classified as wild oats and annual brome grassland, oats\*, bromes\* false brome\*, and/or filaree (*Erodium* spp.\*) must comprise greater than 50 percent relative cover individually or in combination; or bromes\* or false brome\* must comprise greater than 80 percent relative cover separately or co-dominant with other non-natives. Habitat for this vegetation community in California includes foothills, waste places, rangelands, and openings in woodlands between 0 and 7,218 feet (0-2,200 meters) in elevation.

Wild oats and annual brome grasslands make up a majority of the study area acreage. This community varies from areas highly impacted by cattle trampling and non-native and invasive plants to areas with less disturbance that retain low native integrity. Dominant species in this vegetation type include wild oats (*Avena barbata*\*), ripgut brome (*Bromus diandrus*\*), soft chess (*Bromus hordeaceus*\*), oats (*Avena fatua*\*), long-beaked filaree (*Erodium botrys*\*), and foxtail barley (*Hordeum murinum* subsp. *leporinum*\*), with rose clover (*Trifolium hirtum*\*), black mustard (*Brassica nigra*\*), Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*\*), Mediterranean barley (*Hordeum marinum* subsp. *gussoneanum*\*), filaree\*, flax (*Linum bienne*\*), Italian ryegrass (*Festuca perennis*\*), hayfield tarweed (*Hemizonia congesta* subsp. *luzulifolia*), and hoary mustard (*Hirschfeldia incana*\*) present, among others. Small patches of native species including creeping wildrye (*Elymus triticoides*) and purple needlegrass (*Stipa pulchra*) were present throughout this community, although they were not large enough to be mappable units or did not meet the District's 3-category ranking system described in Section 2.7.1. above. Scattered individuals of coyote brush (*Baccharis pilularis* subsp. *consanguinea*) were also present. These were not mapped as shrublands as they were low cover and considered a component of the larger grassland matrix. A small number of gopher burrows were observed in the wild oats and annual brome grasslands after the study area crosses to the east side of the Mezue Trail.

#### Soft Chess – Long-Beaked Filaree Fields (*Bromus hordeaceus* – *Erodium botrys* Herbaceous Semi-Natural Alliance)

Although this vegetation type is not specifically described in the MCV, the description below follows the Wild Oats (*Avena* spp.) – Brome (*Bromus* spp.) Semi-Natural Alliance (Sawyer et al. 2009). As observed on site, soft chess – long-beaked filaree shares many characteristics with wild oats and annual bromes grassland. It is characterized by a characteristic presence of non-native annuals including soft chess\* and long-beaked filaree\*. Emergent trees and shrubs may be present at low cover and herbs are generally less than 4 feet (1.2 meters) in height and cover is open to continuous (Sawyer et al. 2009). According to membership rules, *Bromus hordeaceus*, *Erodium botrys*, and other non-native forbs comprise greater than 30 percent relative cover individually, or share > 50% relative cover in the herbaceous layer. Habitat for this vegetation community in California includes foothills, waste places, rangelands, and openings in woodlands between 0 and 7,218 feet (0-2,200 meters) in elevation.

Soft chess – long-beaked filaree fields was observed at one location in the study area where it crosses the Mezue Trail. Long-beaked filaree was characteristically present in the herbaceous layer with soft chess\*, smooth vetch (*Vicia villosa* subsp. *varia*\*), foxtail barley\*, rose clover\*, hoary mustard\*, Italian thistle\*, Italian ryegrass\*, ripgut brome\*, and smaller amounts of California poppy (*Eschscholzia californica*) and purple needlegrass. Scattered coyote brush individuals are present in this community in the study area.

#### **Ruderal**

Based on the description by Holland and Keil (1995), ruderal vegetation is an assemblage of plants, often a mixture of both native and nonnative weed species that thrive in waste areas, heavily grazed pastures, cultivated and fallow fields, roadsides, parking lots, footpaths, around residences and similar disturbed sites

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\* Denotes a species not native to California.

in towns and cities and along rural roadways. Ruderal communities are difficult to characterize and are often temporary assemblages. In areas of frequent human disturbance, the majority of wild plants are often introduced weeds rather than natives. Some urban weeds are ornamentals that have escaped from cultivation. Ruderal species may at times be integrated into various other communities.

The ruderal vegetation community is represented in the study area by one MCV type: *Conium maculatum* Herbaceous Semi-Natural Alliance, described below.

#### Poison Hemlock Patches (*Conium maculatum* Herbaceous Semi-Natural Alliance)

As described by Swayer et al. (2009), poison hemlock (*Conium maculatum*\*), or another non-native invasive *Apiaceae* species, is dominant or co-dominant in the herbaceous layer with other non-native plants. Emergent trees and shrubs may be present at low cover, including oaks (*Quercus* spp.) and coyote brush (*Baccharis pilularis*). Herbs are generally less than 6.6 feet (2 meters) in height and herbaceous cover is open to continuous. According to membership rules, poison hemlock\* must comprise greater than 50 percent relative cover in the herbaceous layer. This community is generally found on all topographies at elevations below 3,281 feet (1,000 meters).

Within the study area, poison hemlock\* was characteristic enough to comprise a distinct community in one location west of the Mezue Trail on a moderately steep west-facing slope. Where observed poison hemlock\* was dominant in the herbaceous layer with ample cover of black mustard\*, hoary mustard\*, and Italian thistle\*. Native species were absent from this community. No trees or shrubs were present in this community within the study area.

#### Italian Thistle – Milk Thistle Fields (*Carduus pycnocephalus* – *Silybum marianum* Provisional Herbaceous Semi-Natural Association)

This stand is described by Sawyer et al (2009) with Italian thistle\* or similar ruderal forbs as dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Herbs are generally less than 9.8 feet (3 meters) in height and cover is open to continuous. Membership rules for this alliance require Italian thistle\*, black mustard\*, wild radish (*Raphanus sativus*\*), or other non-native forbs comprise more than 50 percent relative cover in the herbaceous layer. Habitat for this alliance are fallow fields, rangelands, grasslands, roadsides, levees, disturbed coastal scrub, riparian areas, cleared roadsides, and waste places. Soils are clays and clay loams. It occurs at elevations below 9,186 feet (2,800 meters) (Sawyer et al. 2009).

Within the study area, Italian thistle – milk thistle (*Silybum marianum*\*) fields are the second most prevalent vegetation community. Where observed it was generally on moderately to highly disturbed ground, often severely impacted by landslides or cattle trampling. Dominant species include Italian thistle\* and milk thistle, often with black mustard\*, hoary mustard\*, poison hemlock (*Conium maculatum*\*), wild radish\*, and jointed charlock (*Raphanus raphinistrum*\*), among others, co-dominant in the herbaceous layer. In general, native species were absent to very sparse in this community. Scattered and sparse coyote brush was present in this community near the northeastern end of the study area.

#### **Wildflower Fields**

According to Holland (1986), wildflower field is an amorphous assemblage of herb-dominated associations noted for conspicuous annual wildflower displays. Species dominance varies from site to site and from year to year at a particular site. Wildflower fields are usually on poor sites that are droughty or low in nutrients and are associated with grasslands or oak woodlands on surrounding, more productive sites. Throughout its range, this community is distributed in valleys and foothills of the California Floristic Province, except the north coast and the desert regions, which are too wet and too dry, respectively.

Wildflower fields are represented in the study area by one MCV type: *Eschscholzia californica* – *Lupinus* spp. Herbaceous Alliance, described below.

### California Poppy – Lupine Fields (*Eschscholzia californica* – *Lupinus* spp. Herbaceous Alliance)

As described, California poppy, lupine (*Lupinus* spp.) and/or another *Eschscholzia* species is characteristically abundant in the herbaceous layer with wild oats\*, *Bromus* spp., red-stemmed filaree (*Erodium cicutarium*\*), hoary mustard\*, rough cat's ear (*Hypochaeris radicata*\*), dove lupine (*Lupinus bicolor*), and foxtail fescue (*Festuca myuros*\*) (Sawyer et al. 2009). Emergent trees and shrubs may be present at low cover. Herbs are generally less than 2 feet (0.5 meters) in height and cover is intermittent to continuous. According to membership rules, California poppy and/or dove lupine is greater than 30 percent relative cover in the herbaceous layer with a variety of native and non-native species also present. Habitat for this vegetation community includes upland slopes or flats below 3,281 feet (1,000 meters). It is typically found on well drained, sandy to loamy soils derived from many substrates, including serpentine, and soils often have high levels of bioturbation.

As observed during 2022 field surveys, California poppy – lupine fields were present at two locations in the northeastern third of the study area. Dove lupine, dense-flowered lupine (*Lupinus microcarpus* var. *densiflorus*), and California poppy were characteristically present in the herbaceous layer with red-stemmed filaree\*, long-beaked filaree\*, smooth vetch\*, summer lupine (*Lupinus formosus* var. *formosus*), flax\*, bellardia (*Bellardia trixago*\*), and hare barley\* present, among others. No trees or shrubs were present in this community within the study area.

### **3.3. MOVEMENT CORRIDORS AND WILDLIFE USE**

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (*i.e.* linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). In general, studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such, are an important conservation tool (Beier and Noss 1998). According to Beier and Loe (1992), wildlife habitat corridors should fulfill several functions. They should maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation.

The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question (Beier and Loe 1992). Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species' everyday survival. Large herbivores, such as deer, and medium-to-large carnivores, such as coyotes, bobcats and mountain lions, are typically passage species. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and that use corridors for a greater length of time. As such, wildlife movement corridors must fulfill key habitat components specific to a species' life history requirements in order for them to survive (Beier and Loe 1992). In general, however, the suitability and/or utility of the landscape – specifically, of the landscape as corridor habitat – is best evaluated on a species-level (Beier and Noss 1998).

The study area occurs within a larger mosaic of natural habitats including grasslands, scrub, and oak woodlands, all of which border dense urban development to the west. These nearby urban areas represent a complete passage barrier to many terrestrial species from that direction. While there are no obvious barriers to movement of wildlife within the study area, the heavy human presence on the public trails within and adjacent to the site may have a negative effect on wildlife use of the area.



Because the study area is comprised largely of grasslands, much of the site can be expected to facilitate passage by species adapted to open habitats. The project may have a temporary effect on wildlife movement during construction due to disturbance from heavy equipment and elevated levels of human activity but will not introduce any barriers to movement once completed. Wildlife will be able to continue utilizing the study area for movement immediately after project construction is complete.

## Section 4. ASSESSMENT AND FINDINGS

In evaluating on-site habitat suitability for special status plant and wildlife species within the study area, relevant literature, knowledge of regional biota, and observations made during the field investigations were applied as analysis criteria. Criteria determinations for occurrence potential of special status species are divided into the five categories described below. Special status species are discussed below if they were determined to meet the determination criteria for Present, Possible, or if they are Not Expected but suitable habitat is present in the study area and it is a species prominent in the current regulatory environment. It should be noted that species occurrence references refer to the CNDDDB Occurrence number (EONDX #) which is a unique number given to each occurrence record for each species. Factors influencing which determination category is applied to each species are detailed below.

- None denotes a complete lack of habitat suitability, local range restrictions, and/or regional extirpations.
- Not Expected denotes situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Incompatible habitat suitability refers to elevation, geology, soil chemistry and type, vegetation communities, microhabitats, and degraded/significantly altered habitats. These factors create unsuitable ecological conditions for the consideration of even a low occurrence potential within the study area.
- Absent indicates specified taxa not observed during field investigations which were consequently ruled out. This category also refers to diagnostic vegetative material of perennial species not observed on site. *This category refers only to plant species.*
- Not Observed refers to plant species that were considered to have a potential to occur within the study area but were not observed during the course of the botanical surveys. This designation is primarily used for annual plant species that may not be present every year.
- Possible indicates the presence of suitable habitat or key habitat elements that potentially support a specific species or taxa.
- Present indicates the target species was either observed directly or its presence was confirmed by diagnostic sign (*i.e.* tracks, scat, burrows, carcasses, castings, prey remains, *etc.*) during field investigations.

### 4.1. SENSITIVE NATURAL COMMUNITIES

No sensitive natural communities were observed within the study area during 2022 field investigations.

### 4.2. SPECIAL STATUS PLANTS

A total of 97 special status plant species are known to occur in the project vicinity<sup>5</sup>. Based on habitats within the study area, a review of available databases and literature listed in Section 2.3, and familiarity with the regional flora, it was determined that twelve special status plant species had the potential to occur within the study area and were considered targets for rare plant surveys. The remaining 85 special status plant species were ruled out as occurring on site based on lack of suitable habitat such as vernal pools,

<sup>5</sup> Vicinity is defined as the area included within the nine U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles that are centered on the study area, including San Francisco North, Oakland West, Oakland East, San Quentin, Richmond, Briones Valley, Petaluma Point, Mare Island, and Benicia.

playas, coastal dunes, coastal bluff scrub, coniferous forest, pinyon juniper woodland, serpentine soils, clay barrens, or alkaline soils. Species were also ruled out due to the lack of appropriate bedrock substrates, elevation ranges, and distributional limits. A complete list of all 97 species considered as part of this assessment, their regulatory status, habitat requirements, local distribution, and potential for occurrence are listed in Appendix B. Special status plant species recorded in the project vicinity from the CNDDDB are depicted in Figure 4. The CNDDDB and USFWS species lists are shown in Appendices D and E.

During this study, a total of 99 plant species were observed within the study area. Of these species, 33 (33 percent) are considered native species and 66 (67 percent) are considered non-native species that have an origin outside of California. Generally, native species were sparse throughout the study area and were only characteristically present in California poppy – lupine fields. Native species were notably sparse or absent from Italian thistle – milk thistle fields and poison hemlock patches. A complete list of plant species observed within the study area is presented in Appendix G.

#### 4.2.1 FEDERALLY AND/OR STATE LISTED AND CALIFORNIA RARE PLANT SPECIES

Of the 12 special status plant species determined to have the potential to occur within the study area, two are federally and/or state listed species, including Santa Cruz tarplant (*Holocarpha macradenia*) and two-fork clover (*Trifolium amoenum*) (Table 8). However, based on the results of protocol-level rare plant surveys in 2022 neither of these species were observed within the study area (Table 8).

#### 4.2.2 CALIFORNIA RARE PLANT RANK SPECIES

All 12 of the special status plant species determined to have the potential to occur within the study area are included in the California Native Plant Society Rare Plant Inventory (CNPS 2022). However, based on the results of protocol-level rare plant surveys in 2022 none of these species were observed within the study area (Table 8).

**Table 8. Potentially Occurring Special Status Plant Species**

SPECIES	LISTING STATUS <sup>1</sup>	POTENTIAL FOR OCCURRENCE	SURVEY TIMING
<b><u>FEDERAL AND/OR STATE LISTED AND CALIFORNIA RARE PLANT RANK SPECIES</u></b>			
<i>Holocarpha macradenia</i> Santa Cruz tarplant	Federal: FT State: SE CPRP: 1B.1	Not Observed	July
<i>Trifolium amoenum</i> two-fork clover	Federal: FE State: CEQA CPRP: 1B.1	Not Observed	May
<b><u>CALIFORNIA RARE PLANT RANK SPECIES</u></b>			
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	Federal: None State: CEQA CPRP: 1B.2	Not Observed	March/April
<i>Androsace elongata</i> subsp. <i>acuta</i> California androsace	Federal: None State: CEQA CPRP: 4.2	Not Observed	March/April
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	Federal: None State: CEQA CPRP: 1B.2	Absent	June
<i>Fritillaria liliacea</i> fragrant fritillary	Federal: None State: CEQA CPRP: 1B.2	Not Observed	March/April
<i>Helianthella castanea</i> Diablo helianthella	Federal: None State: CEQA CPRP: 1B.2	Absent	April

SPECIES	LISTING STATUS <sup>1</sup>	POTENTIAL FOR OCCURRENCE	SURVEY TIMING
<i>Iris longipetala</i> coast iris	Federal: None State: CEQA CPRP: 4.2	Absent	April
<i>Leptosiphon aureus</i> bristly leptosiphon	Federal: None State: CEQA CPRP: 4.2	Not Observed	May
<i>Lessingia hololeuca</i> woolly-headed lessingia	Federal: None State: CEQA CPRP: 3	Not Observed	September
<i>Meconella oregana</i> Oregon meconella	Federal: None State: CEQA CPRP: 1B.1	Not Observed	March/April
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	Federal: None State: CEQA CPRP: 3.2	Not Observed	April

**<sup>1</sup>Explanation of State and Federal Listing Codes**

U.S. Fish and Wildlife Service – Federal Endangered Species Act (FESA):

FE Federally Endangered

FT Federally Threatened

California Department of Fish and Wildlife – California Endangered Species Act (CESA):

SE California Endangered

California Rare Plant Rank codes:

1B Rare, Threatened, or Endangered in California and elsewhere

3 Plants about which more information is needed (a review list)

4 Plants of limited distribution – Watch list

California Rare Plant Rank threat codes:

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

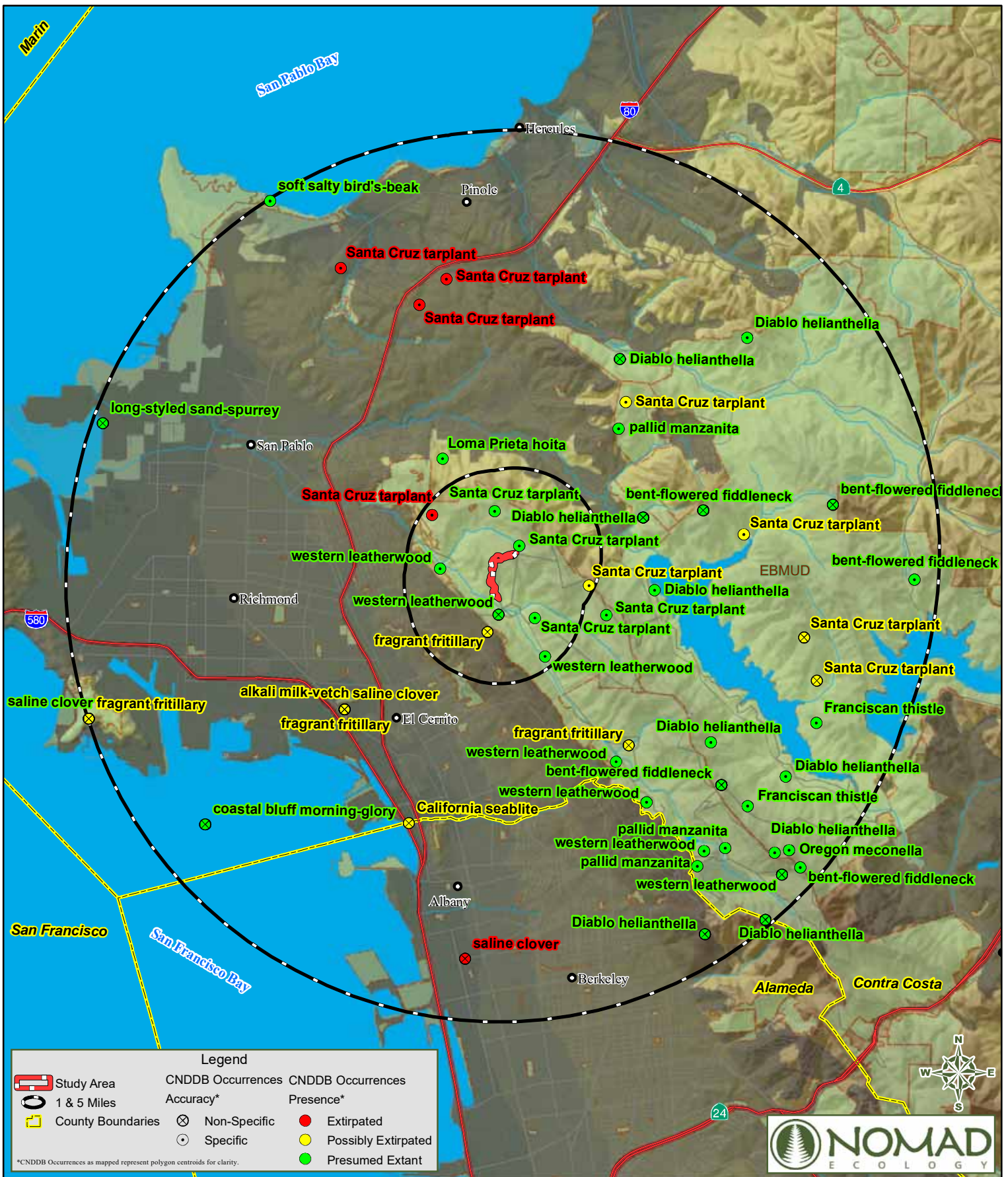
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

**4.2.3 LOCALLY RARE PLANT SPECIES**

In accordance with CEQA’s Article 9 and CEQA Guidelines Sections 15125(a) and 15380, which state that “special emphasis should be placed on environmental resources that are rare or unique to that region,” and CNPS’s goal of preserving plant biodiversity on a regional and local scale, this study also assessed the occurrence of locally significant plant species. Locally significant plant species are those considered to be at the outer limits of their known distribution, a range extension, a rediscovery, or rare or uncommon in a local context (CNPS 2001b). These species are not regarded as special-status species by the USFWS or CDFW and are therefore not tracked by these agencies. The East Bay chapter of CNPS since 1989 has developed and maintains a Database of Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties which tracks populations of locally rare and statewide rare plants which have limited distribution in Alameda and Contra Costa counties, including many that reach their range limit in these two counties.

Based on the results of the 2022 surveys, a total of 2 locally rare plant species were observed in the study area, including 2 C-ranked species, foothill needlegrass (*Stipa lepidota*) and purple needlegrass (*S. pulchra*). A rarity ranking of C in the Database of Rare, Unusual, and Significant Plants of Alameda and Contra Costa Counties indicates a species is on the Second-Priority Watch List, meaning it is currently known from 10 to 15 regions in the two counties, but potentially threatened if certain conditions persist such as over-development, water diversions, excessive grazing, and/or weed or insect invasions, etc.

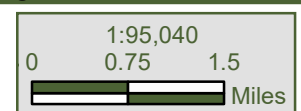




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**Figure 7**  
 California Natural Diversity Database Special Status  
 Plant Species Occurrences within 5 Miles of the Project  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: ESRI Aerial Imagery Basemap, California Spatial Information Library, Bay Area Open Space Council, California Department of Fish and Wildlife, EBRPD

### 4.3. NOXIOUS/INVASIVE WEEDS

During the course of this study, 66 (approximately 67%) of the plant species observed within the study area were non-native plant species. A non-native plant species is defined as a species that is occurring outside of its native distributional range having arrived here by human activity. Some of the non-native plant species encountered in the study area are tracked by the California Department of Food and Agriculture (CDFA 2022) and the California Invasive Plant Council (Cal-IPC 2022) due to their noxious, invasive, or weedy behavior. Species tracked by these organizations are given a certain rating based on criteria such as ecological impacts, treatment or eradication priority, and threats they pose to agricultural economics.

A total of 32 plant species with elevated threat rankings (e.g. Cal-IPC rating of Limited, Moderate, or High or on the California Noxious Weed List) were observed within the study area (Table 9). Many of these species were ubiquitous in the study area and some were dominant enough to comprise their own vegetation communities.

Of the non-native plant species tracked by Cal-IPC and CDFA, the following discussion only includes those that were dominant on the landscape in a specific area, pose a potential threat to sensitive botanical resources, or have the potential to spread within the study area. These species are referred to as invasive plants of concern and their locations are depicted on Figure 8. While other non-native plant species tracked by Cal-IPC and CDFA were observed within the study area and noted on the plant list (Appendix G), they were either too ubiquitous on the landscape or do not currently pose enough of a threat to sensitive botanical resources to warrant discussion here.

**Table 9. Non-Native Species with Elevated Threat Rankings Observed in the Study Area**

SPECIES NAME	COMMON NAME	California Invasive Plant Council Rank (Cal-IPC 2022)*	California Department of Food and Agriculture Noxious Weed List (CDFA 2022)**
<b><u>INVASIVE PLANTS OF CONCERN</u></b>			
<i>Conium maculatum</i>	poison hemlock	Moderate	---
<i>Cynara cardunculus</i> subsp. <i>flavescens</i>	artichoke thistle	Moderate	On List
<i>Oxalis pes-caprae</i>	Bermuda buttercup	Moderate	---
<b><u>OTHER NON-NATIVE SPECIES WITH ELEVATED RANKINGS</u></b>			
<i>Avena barbata</i>	slender oats	Moderate	---
<i>Avena fatua</i>	wild oats	Moderate	---
<i>Brachypodium distachyon</i>	false brome	Moderate	---
<i>Brassica nigra</i>	black mustard	Moderate	---
<i>Bromus diandrus</i>	ripgut brome	Moderate	---
<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle	Moderate	On List
<i>Centaurea calcitrapa</i>	purple star thistle	Moderate	On List
<i>Cirsium vulgare</i>	bull thistle	Moderate	On List
<i>Cynosurus echinatus</i>	dogtail grass	Moderate	---
<i>Festuca myuros</i>	foxtail fescue	Moderate	---

SPECIES NAME	COMMON NAME	California Invasive Plant Council Rank (Cal-IPC 2022)*	California Department of Food and Agriculture Noxious Weed List (CDFA 2022)**
<i>Festuca perennis</i>	Italian ryegrass	Moderate	---
<i>Geranium dissectum</i>	cut-leaf geranium	Moderate	---
<i>Hirschfeldia incana</i>	hoary mustard	Moderate	---
<i>Hordeum marinum</i> subsp. <i>gussoneanum</i>	Mediterranean barley	Moderate	---
<i>Hordeum murinum</i> subsp. <i>leporinum</i>	hare barley	Moderate	---
<i>Hypochaeris radicata</i>	rough cat's ear	Moderate	---
<i>Rumex acetosella</i>	sheep sorrel	Moderate	---
<i>Bellardia trixago</i>	bellardia	Limited	---
<i>Bromus hordeaceus</i>	soft chess	Limited	---
<i>Carduus tenuiflorus</i>	slender flowered thistle	Limited	On List
<i>Erodium cicutarium</i>	red-stemmed filaree	Limited	---
<i>Helminthotheca echioides</i>	bristly ox-tongue	Limited	---
<i>Hypochaeris glabra</i>	smooth cat's ear	Limited	---
<i>Medicago polymorpha</i>	burclover	Limited	---
<i>Plantago lanceolata</i>	English plantain	Limited	---
<i>Silybum marianum</i>	milk-thistle	Limited	---
<i>Sinapis arvensis</i>	charlock	Limited	---
<i>Trifolium hirtum</i>	rose clover	Limited	---
<i>Convolvulus arvensis</i>	bindweed	---	On List

\*Cal-IPC Weed Ranking Definitions (Cal-IPC 2022):

**High:** These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

**Moderate:** These species have substantial and apparent - but generally not severe - ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

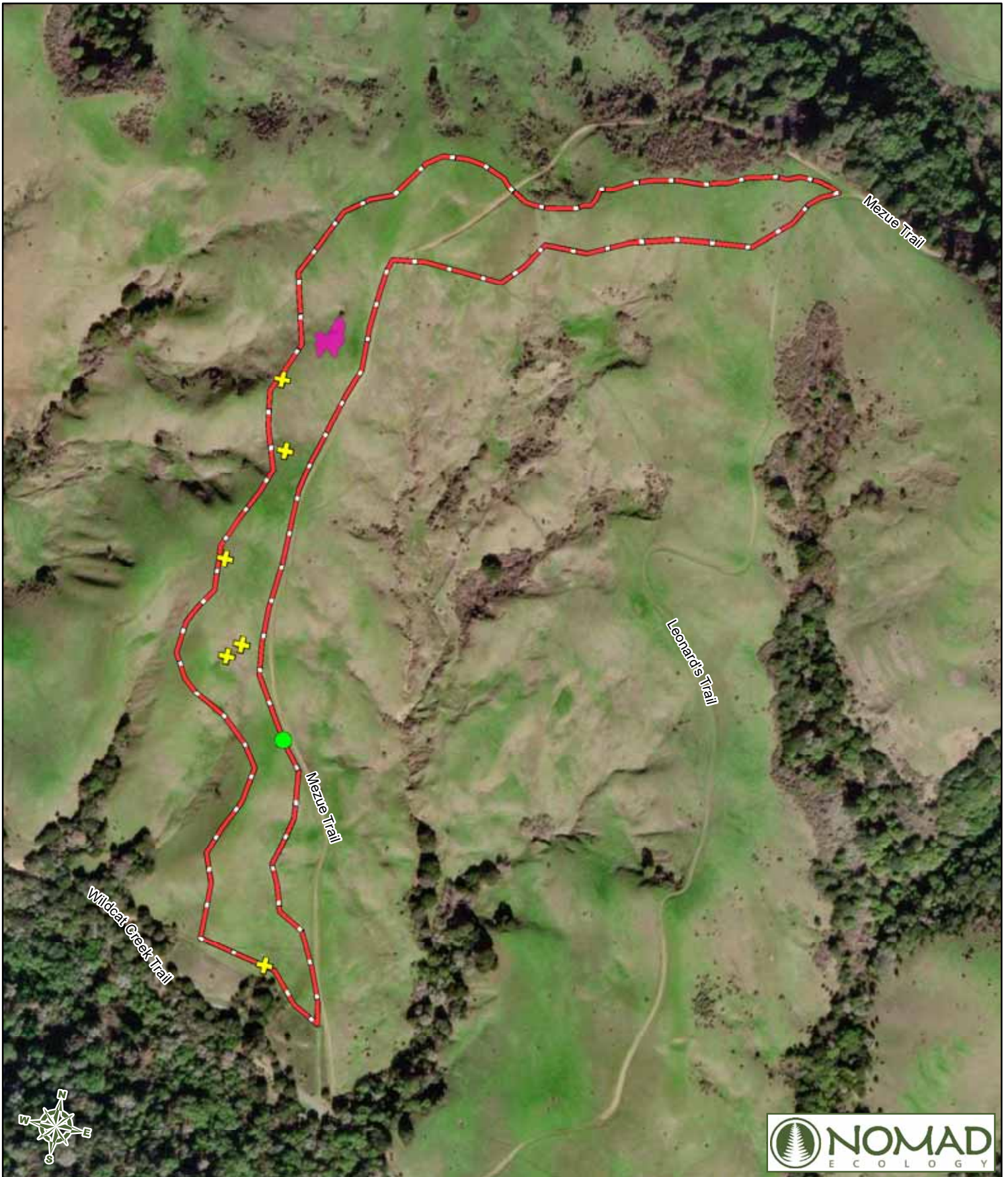
**Limited:** These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

\*\* Species considered a noxious weed by CDFA are listed on the California Noxious Weed List (CDFA 2022).

#### 4.3.1 INVASIVE PLANTS OF CONCERN ON SITE






Poison hemlock (*Conium maculatum*\*), artichoke thistle (*Cynara cardunculus* subsp. *flavescens*\*), and Bermuda buttercup (*Oxalis pes-caprae*\*) are invasive plants found on site that have the potential to cause significant impacts to native plant populations, are of particular concern to sensitive natural resources, or have a very limited distribution and so would be feasible to manage. Below is a brief description of these species and their general locations within the study area.



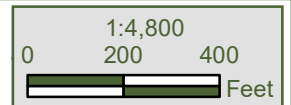


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Legend	
	Study Area
	Invasive Plants of Concern
	Poison hemlock
	Bermuda buttercup
	Artichoke thistle

**Figure 8**  
Invasive Plants of Concern in the Study Area  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: EBRPD, Nomad Ecology LLC



### **Poison Hemlock (*Conium maculatum*)**

#### *General Information*

Poison hemlock is an erect biennial (sometimes annual or short-lived perennial) in the carrot family (Apiaceae) that is native to Europe. Plants exist as large basal rosettes of leaves during the first year. All plant parts are highly toxic to humans and animals when ingested. Most animals avoid eating poison hemlock when suitable forage is available. Poison hemlock inhabits fields, pastures, roadsides, ditches, riparian areas, cultivated fields, and other disturbed, often moist, sites (DiTomaso and Healy 2007).

#### *Relevant Life History Traits*

Poison hemlock reproduces by seed. Seeds fall near the parent plant but some may disperse to greater distances with human activities, water, soil movement, and animals. After dispersal most seeds can germinate almost immediately if conditions are favorable, but a small proportion remains dormant. Germination occurs with the first fall rains through early spring. Seeds can survive up to about three years under field conditions (DiTomaso and Healy 2007).

#### *Occurrence within the Study Area*

One population of poison hemlock was observed in the study area on the west side of the Mezue Trail where it comprised its own vegetation community surrounded by wild oats and annual bromes grassland. Due to the limited distribution, relatively small patch size, and the potential for spread following disturbance, this species is recommended for control.

### **Artichoke Thistle (*Cynara cardunculus* subsp. *flavescens*)**

#### *General Information*

Artichoke thistle is a large perennial in the sunflower family (Asteraceae) that usually invades disturbed grassland primarily in coastal regions. Dense colonies displace desirable vegetation and wildlife and can exclude livestock. Artichoke thistle is native to the Mediterranean region. Artichoke thistle inhabits disturbed, open sites in grassland, pasture, chaparral, coastal sage scrub, riparian areas, and abandoned agricultural fields (DiTomaso and Healy 2007).

#### *Relevant Life History Traits*

Artichoke thistle reproduces primarily by seed. Less frequently it reproduces by root fragments, usually resulting from mechanical disturbance. Most seeds fall near the parent plant or are dispersed short distances with wind and to greater distances with human activities, water, mud, soil movement, and animals. Most seeds germinate after the first fall rains. Most seeds survive about five years in the soil under field conditions. Individual plants often live for many years (DiTomaso and Healy 2007).

#### *Occurrence within the Study Area*

Six populations of artichoke thistle were observed growing in the study area, most of them consisting of single plants. All are found in the portion of the study area on the west side of the Mezue Trail in wild oats and annual bromes grassland. Due to the relatively limited distribution and small number of individuals of artichoke thistle in the study area and the potential for spread following disturbance, this species is recommended for control.

### **Bermuda Buttercup (*Oxalis pes-caprae*)**

#### *General Information*

Bermuda buttercup is a low-growing perennial with shamrock-like leaves and yellow flowers. It contains soluble oxalates and can be lethally toxic to livestock when ingested in quantity. Bermuda buttercup usually inhabits coastal dunes, scrub, grasslands, oak woodlands, gardens, turf, urban areas, and agricultural fields. It can grow in most environments and can tolerate many soil types, but inland it grows primarily in semi-

shaded sites. It was introduced from South Africa as a garden ornamental (DiTomaso and Healy 2007).

*Relevant Life History Traits*

Bermuda buttercup reproduces vegetatively by bulbs. These can be spread along roadsides with vehicular movement, and by transportation of soil. Bulbs typically germinate in fall, typically after the first rain, but in dry years, some bulbs can germinate before it rains (UC Press 2013).

*Occurrence within the Study Area*

One population of Bermuda buttercup was observed in Italian thistle – milk thistle fields adjacent to the Mezue Trail in the southern half of the study area. This population was observed at less than 10 feet in diameter. Due to the limited distribution and small population size of Bermuda buttercup in the study area and the potential for spread following disturbance, this species is recommended for control.

**4.4. SPECIAL STATUS WILDLIFE**

Based on the field investigation, review of available databases and literature listed above in Section 2.3, familiarity with local fauna, and on-site habitat suitability, a total of 97 special status fish and wildlife species were considered as part of this assessment. Of these, 9 were determined to have potential to occur within the study area and could be affected by the project as proposed (Table 9). These include federally or state-listed threatened and endangered species and California Department of Fish and Wildlife designated Species of Special Concern (SSC), which are of concern because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The remaining taxa were ruled out based on the lack of suitable habitat (e.g., salt marshes, serpentine, interior sand dunes, vernal pools, mud flats, and shoreline habitats), local extirpations, lack of connectivity between areas of suitable and occupied habitat, incompatible land use, and habitat degradation. A complete list of all 98 species considered as part of this assessment, their regulatory status, habitat requirements, local distribution, and potential for occurrence are listed in Appendix C. The 88 species with no potential to occur within the study area are not discussed further in the body of this report. Special status animal species recorded in the project vicinity from the CNDDDB are depicted in Figure 9. The CNDDDB and USFWS species lists are shown in Appendices D and E.

**Table 10. Potentially Occurring Special Status Fish and Wildlife Species**

SPECIES	LISTING STATUS <sup>1</sup>	POTENTIAL FOR OCCURRENCE
<b><u>Invertebrates</u></b>		
<i>Bombus caliginosus</i> Obscure bumble bee	Federal: None State: SA	Possible
<i>Bombus crotchii</i> Crotch bumble bee	Federal: None State: SCE	Possible
<i>Bombus occidentalis</i> Western bumble bee	Federal: None State: SCE	Possible
<i>Helminthoglypta nickliana bridgesi</i> Bridges' Coast Range shoulderband snail	Federal: None State: SA	Possible
<b><u>Amphibians</u></b>		
<i>Rana draytonii</i> California red-legged frog	Federal: FT State: SSC	Possible
<b><u>Reptiles</u></b>		
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	Federal: FT State: ST	Possible
<i>Actinemys marmorata</i> Western pond turtle	Federal: None State: SSC	Possible

SPECIES	LISTING STATUS <sup>1</sup>	POTENTIAL FOR OCCURRENCE
<b>Birds</b>		
<i>Accipiter cooperii</i> Cooper's hawk (nesting)	Federal: None State: WL	Possible
<i>Elanus leucurus</i> White-tailed kite (nesting)	Federal: None State: FP	Possible

<sup>1</sup>**Explanation of State and Federal Listing Codes:**

U.S. Fish and Wildlife Service – Federal Endangered Species Act (FESA):

FE Federally Endangered

FT Federally Threatened

California Department of Fish and Wildlife – California Endangered Species Act (CESA):

SE California Endangered

ST California Threatened

FP Fully Protected

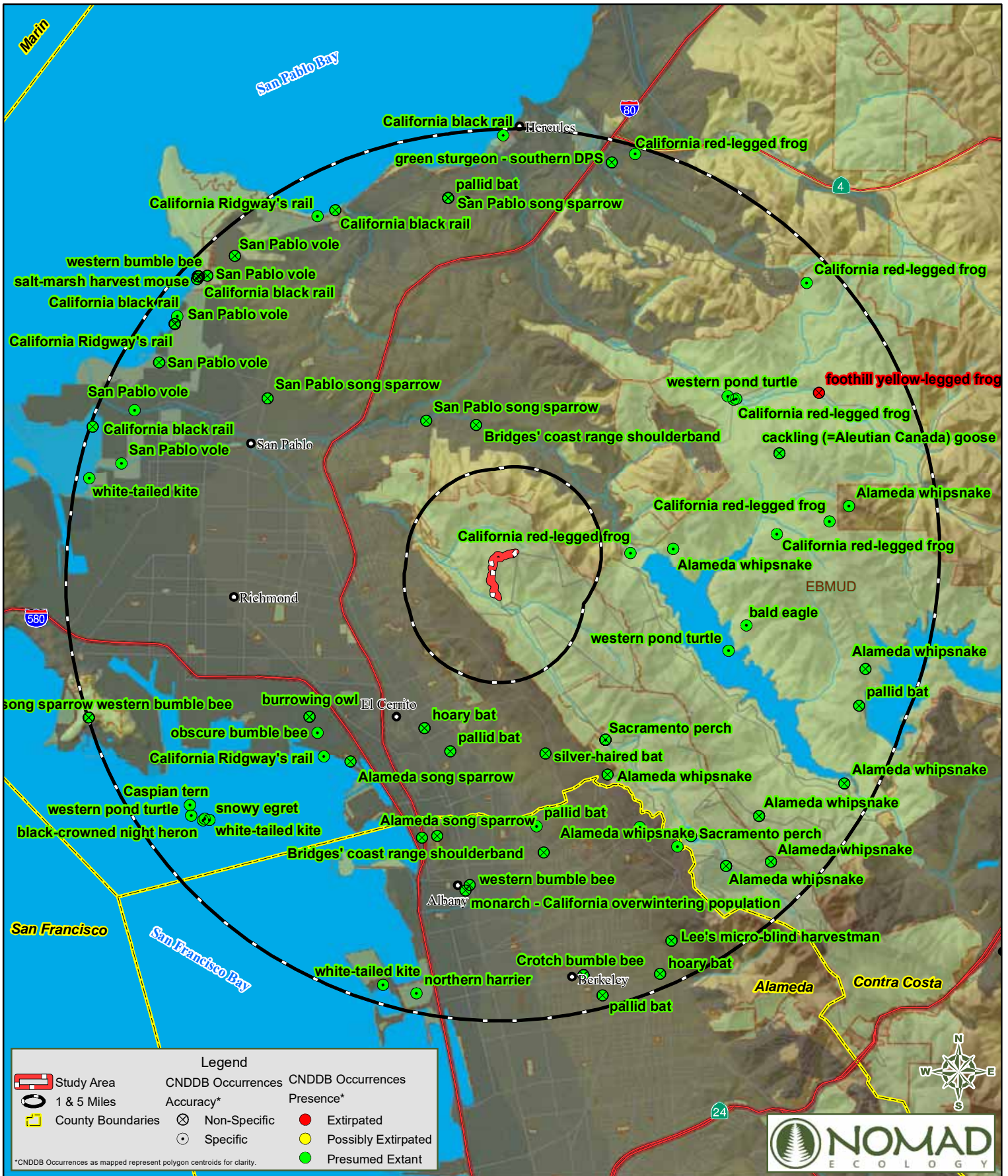
SCE Candidate for state listing as Endangered

SA Special Animal

SSC Species of Special Concern

WL Watch List

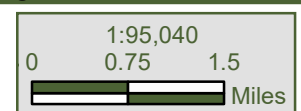




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**Figure 9**  
 California Natural Diversity Database Special Status  
 Wildlife Species Occurrences within 5 Miles of the Project  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: ESRI Aerial Imagery Basemap, California Spatial Information Library, Bay Area Open Space Council, California Department of Fish and Wildlife, EBRPD

#### 4.4.1 INVERTEBRATES

Four special status invertebrate species were determined to have the potential to occur within the study area. These species are discussed below.

##### Special Status Bumble Bees

Three special status bumble bee species have the potential to occur within the study area:

- Obscure bumble bee (*Bombus caliginosus*) – Included on CDFW’s Special Animals List
- Crotch bumble bee (*Bombus crotchii*) – State candidate for listing as endangered
- Western bumble bee (*Bombus occidentalis*) – State candidate for listing as endangered

##### *Status, Distribution and Habitat Requirements*

Specific habitat requirements for each of these species are variable and not fully understood, but they are generally known to nest underground, in abandoned rodent burrows, or in decaying wood and trees. All three of these bumble bee species may occur in grasslands, scrub, or open woodlands. The obscure bumble bee occurs along the Pacific Coast from southern California to southern British Columbia, with scattered records from the east side of California’s Central Valley. The Crotch bumble bee was previously found throughout southern California and the Central Valley, but is now nearly absent from the Central Valley. The western bumble bee was previously found throughout the Coast Ranges and Sierra Nevada, but more recently appears to be largely restricted to high-elevation sites in the Sierras and scattered coastal locations. Widespread use of pesticides in agricultural lands and habitat fragmentation are thought to have led to severe declines of these species (COSEWIC 2014, CDFW 2019).

##### *Occurrence Data and Habitat Suitability*

There are three records of western bumble bee recorded in the CNDDDB within 5 miles of the study area, all of which represent museum specimens collected between the 1930s and 1990s (EONDX #100053, #100159, and #100047). Records of Crotch bumble bee were recorded in 1933 and 2015 (EONDX #119341). Records of obscure bumble bee were recorded in 1933 (EONDX #97899) (CDFW 2022f).

Occurrences of all bumble bee species are also tracked by Bumble Bee Watch, a collaborative project between several universities and non-profit entities that accepts and vets bumble bee sightings submitted by the public. Bumble Bee Watch has not recorded any recent verified sightings of western bumble bee anywhere in the greater San Francisco Bay Area. There have, however, been recent verified observations of Crotch bumble bee near Fairfield, Solano County (2014), in Berkeley, Alameda County (2015), in Santa Teresa County Park, Santa Clara County (2019), and in San Jose, Santa Clara County (2021) (Bumble Bee Watch 2022). There have been recent verified observations of obscure bumble bee in San Francisco and Mountain View, Santa Clara County, both from 2021 (Bumble Bee Watch 2022). This suggests that the Crotch bumble bee and obscure bumble bee are still extant in the region, though the status of the western bumble bee is less certain. Regardless, the study area is within the formerly known range for all three of these species.

Suitable habitat for all three bumble bee species is present within the study area, as they may build nests underground or in decaying wood anywhere on site.

##### *Potential Project-Related Effects*

Grading for trail construction and any other ground-disturbing activities associated with the project could damage or destroy underground nests of these bumblebee species. Impacts to special status bumblebee

species potentially occurring onsite will be avoided through implementation of avoidance and minimization measures, including preconstruction surveys and biological monitoring.

### **Bridges' Coast Range Shoulderband Snail (*Helminthoglypta nickliana bridgesi*)**

#### *Status, Distribution and Habitat Requirements*

The Bridges' coast range shoulderband is included on CDFW's Special Animals list, and has a NatureServe rank of G3T1 S1S2 meaning that: (1) the species is "vulnerable" and the subspecies is "critically imperiled" at the global level, and (2) the subspecies is "critically imperiled" to "imperiled" at the statewide level. The Bridges' coast range shoulderband occurs in rock piles and weedy grasslands on open hillsides in Alameda and Contra Costa counties (CDFW 2022e).

#### *Occurrence Data and Habitat Suitability*

The only CNDDDB occurrence of Bridge's coast range shoulderband snail within 5 miles (EONDX #23085), was recorded on an unspecified date approximately 1.7 miles north of the study area (CDFW 2022f) near El Sobrante. Suitable habitat is present among grasslands throughout the study area.

#### *Potential Project Related Effects*

Grading for trail construction and any other ground-disturbing activities associated with the project could result in injury or mortality to individual Bridge's coast range shoulderband snails. Impacts from construction will be avoided through implementation of avoidance and minimization measures, including preconstruction surveys and biological monitoring.

## **4.4.2 AMPHIBIANS**

One special status amphibian species was determined to have the potential to occur within the study area. This species is discussed below.

### **California Red-Legged Frog (*Rana draytonii*)**

#### *Status, Distribution and Habitat Requirements*

The California red-legged frog is a federally listed threatened species and a California Species of Special Concern. The California red-legged frog is one of two species of red-legged frog endemic to the Pacific Coast. Historically it occurred from Riverside County to Mendocino County along the Coast Range; from Calaveras County to Butte County in the Sierra Nevada; and in Baja California, Mexico. California red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. The species is believed to be extinct from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (USFWS 2017a).

California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral drainages in valley bottoms and foothills up to 1,500 meters (4,921 feet) in elevation (Jennings and Hayes 1984, Bulger et al. 2003). Adults breed in a variety of aquatic habitats, while larvae and metamorphs use streams, deep pools, backwaters of streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons. Stock ponds are frequently used for breeding when they provide a suitable hydroperiod, pond structure, and vegetative cover, and when they are managed to control nonnative predators such as bullfrogs and exotic fish. Red-legged frog breeding occurs between November and April within still or slow-moving water with light to dense, riparian or emergent vegetation, such as cattails (*Typha* spp.), tules, or overhanging willows (*Salix* spp.) (Hayes and Jennings 1988). Egg masses



are attached to vegetation below the surface and hatch after 6 to 14 days (Storer 1925, Jennings and Hayes 1994). Larvae undergo metamorphosis 3.5 to 7 months following hatching and reach sexual maturity at 2 to 3 years of age (Jennings and Hayes 1994).

Some red-legged frogs remain at breeding sites during the non-breeding season, whereas others disperse into adjacent upland habitat or to other aquatic sites (Fellers 2005, Fellers and Kleeman 2007, Tatarian 2008). Tatarian (2008) reported that 57% of frogs fitted with radio transmitters in the Round Valley of eastern Contra Costa County stayed at their breeding pools, whereas 43% moved into adjacent upland habitat or to other aquatic sites. The distance red-legged frogs will travel from breeding sites is site dependent. Fellers and Kleeman (2007) reported that only a few frogs in Marin County moved farther than the nearest suitable non-breeding habitat. In this study, the furthest distance traveled was 1.4 kilometers (0.9-mile) and most dispersing frogs moved through grazed pastures to reach the nearest riparian habitat (Fellers and Kleeman 2007). In general, terrestrial habitats used by red-legged frogs have abundant cover (e.g., burrows, woody debris, and vegetation), and those terrestrial habitats are relatively close to water (USFWS 2002a, Fellers and Kleeman 2007, Tatarian 2008).

Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including ground squirrel burrows at the bases of trees or rocks, logs, grass thatch, crevices, cow hoof prints, and a downed barn door; others were associated with upland sites lacking refugia (Tatarian 2008). Uplands closer to aquatic sites were more often used and were more commonly associated with areas having abundant sources of cover (e.g., small woody debris, rocks, and vegetation). California red-legged frog diet is site dependent but consists mostly of terrestrial invertebrates (Bishop et al. 2014).

California red-legged frogs are currently threatened by loss of habitat from the growth of cities and suburbs, mining, overgrazing by cattle, invasion of nonnative plants, impoundments, water diversions, stream maintenance for flood control, degraded water quality, and introduced predators, such as bullfrogs. The fragmentation of existing habitat and the continued colonization of existing habitat by nonnative species may represent the most significant threat (USFWS 2017a). Although a positive correlation exists between the absence of California red-legged frogs and the presence of bullfrogs, these two species are known to coexist in some environments (Doubledee et al. 2003, Cook and Currylow 2014).

#### *Habitat Assessment and Occurrence in the Project Vicinity*

There are 6 documented CNDDB occurrences of California red-legged frog within 5 miles of the study area, the nearest of which was recorded in 2008 in a spillway near San Pablo Reservoir (EONDX #117342) approximately 1.6 miles east of the study area. One occurrence exists from 1956 in a small reservoir 2.4 miles southeast along Wildcat Creek in Charles Tilden Regional Park (EONDX #119849). The other four occurrences exist several drainages away to the east (CDFW 2022f).

There is no suitable aquatic habitat for California red-legged frogs within the study area, as it lacks any ponds or wetland features with a sufficient hydroperiod for larval development or for non-breeding aquatic refuge. A stock pond that is present approximately 430 feet north of the study area, along with Wildcat Creek which is approximately 500 feet to the south, form potential breeding habitat in the nearby vicinity. Suitable upland habitat is present under woody debris and leaf litter within and adjacent to the study area. A small number of gopher burrows present within the study area are marginal at best for California red-legged frogs, and are unlikely to be utilized by the species. Any California red-legged frogs that may be breeding or otherwise utilizing ponds in the vicinity could occur within the study area during dispersal movements, but are unlikely to remain within the study area for any length of time due to the general lack of cover.

### *Potential Project Related Effects*

Grading for trail construction and any other ground-disturbing activities associated with the project could result in injury or mortality to individual California red-legged frogs that may be present within the trail alignment. Impacts from construction will be avoided through implementation of avoidance and minimization measures, including preconstruction surveys and biological monitoring.

#### **4.4.3 REPTILES**

Two special status reptile species were determined to have the potential to occur within the study area. These species are discussed below.

##### **Alameda Whipsnake (*Masticophis lateralis euryxanthus*)**

###### *Status, Distribution and Habitat Requirements*

The Alameda whipsnake (also known as the Alameda striped racer) is federally and state listed as threatened. It is endemic to California and occurs only in a small region on the east side of the San Francisco Bay in Contra Costa and Alameda counties, and parts of San Joaquin and Santa Clara Counties (Nafis 2021). The historical range of the Alameda whipsnake has been fragmented into five disjunct populations: Tilden-Briones, Oakland-Las Trampas, Hayward-Pleasanton Ridge, Mount Diablo-Black Hills, and Sunol-Cedar Mountain (USFWS 1997). Potential habitat for this species includes mixed chaparral, coastal scrub, and annual grassland and oak woodlands adjacent to scrub habitats (USFWS 2006). Grassland areas linked to scrub by rock outcrops or river corridors are also considered primary constituent elements of habitat (USFWS 2002b). The Alameda whipsnake requires open and partially open, low-growing shrub communities for many of its biological needs. Shrub communities provide cover for snakes during dispersal, cover from predators, and a variety of microhabitats where whipsnakes can move to regulate their body temperature (Swaim 1994). Other important habitat features include small mammal burrows, rock outcrops, talus (a sloping mass of rock debris at the base of a cliff), and other forms of shelter. These features provide whipsnakes with alternative habitats for temperature regulation, predator protection, egg laying, and periods of winter dormancy (Alameda whipsnakes generally spend November through March in winter hibernacula) (USFWS 2006).

Alameda whipsnake populations have declined due to loss of habitat associated with urban expansion (USFWS 2006). Urban development, particularly road and highway construction, has also fragmented Alameda whipsnake populations and made them more vulnerable to extinction. In addition, urban development adjacent to whipsnake habitat can indirectly impact the species by increasing predator populations (including domestic and feral cats) and public recreational use. Other significant threats to the species include grazing and fire suppression practices that degrade chaparral habitats (USFWS 1997).

###### *Occurrence Data and Habitat Suitability*

There are nine occurrences of Alameda whipsnake within 5 miles of the study area. One of these occurrences (EONDX # 80335) was recorded 2.1 miles east near San Pablo Reservoir in 2006. Two additional occurrences exist from 1951 and 2003, 2.76 and 3.9 miles respectively, southeast of the study area within the vicinity of the Wildcat Creek drainage (CDFW 2022f).

The study area is located within Alameda whipsnake Critical Habitat Unit 1. Unit 1 is located in the northwest part of the East Bay Hills between Highway 24 to the south and Highway 4 to the north and composed mostly of lands managed by the East Bay Municipal Utilities District (EBMUD) and the District. There are three Primary Constituent Elements (PCE's) of Alameda whipsnake Critical Habitat, defined as 1) Scrub/shrub communities with a mosaic of open and closed canopy; 2) woodland or annual grassland plant communities contiguous to lands containing PCE 1; and 3) lands containing rock outcrops, talus, and small mammal burrows within or adjacent to PCE 1 and/or PCE 2 (USFWS 2006). The grassland habitat within the study area contains PCE 2.

Based on the presence of suitable scrub habitat adjacent to the study area, Alameda whipsnakes have potential to occur on site. They are most likely to occur within and immediately adjacent to the Diablan sage scrub habitat near the northern periphery of the proposed trail alignment, though they may occasionally be present anywhere on site, including grasslands, during dispersal movements. A small number of gopher burrows present within the study area are marginal at best for Alameda whipsnakes due to their distance from suitable scrub habitat, and are unlikely to be utilized by the species.

#### *Potential Project Related Effects*

Grading for trail construction and any other ground-disturbing activities associated with the project could result in injury or mortality to individual Alameda whipsnakes that may be present within the trail alignment. Alameda whipsnakes are wary and fast-moving, and any individuals that are present during project construction will likely be able to move away on their own. Impacts to Alameda whipsnakes potentially occurring onsite during construction will be avoided through implementation of avoidance and minimization measures, including preconstruction surveys and biological monitoring. Once project construction is completed and the trail opens to the public, individual Alameda whipsnakes may be subject to injury or mortality resulting from collisions with bicycles. Alameda whipsnakes could utilize the trail as a basking surface, particularly those sections nearest to scrub habitat, and may not be able to move out of the way quickly enough to avoid fast-moving bicycles. However, because the trail is proposed within marginally suitable grassland habitat where the species is only likely to occur sporadically, effects from trail use will be minimal. Furthermore, the creation of the flow trail may divert bicyclists off of the portion of the Mezue Trail that passes directly through suitable scrub habitat immediately north of the study area, funneling them instead into grassland habitat where Alameda whipsnakes are less likely to occur and thereby reducing the overall probability of collisions.

### **Western Pond Turtle (*Actinemys marmorata*)**

#### *Status, Distribution, and Habitat Requirements*

The western pond turtle, a California Species of Special Concern, is the only freshwater turtle native to greater California and is distributed along much of the western coast from the Puget Sound in Washington south to the Baja Peninsula, Mexico. The literature describes two subspecies of western pond turtle; the northwestern pond turtle (*Actinemys marmorata*) and the southwestern pond turtle (*Actinemys pallida*). Overall, western pond turtles are habitat generalists, and have been observed in slow-moving rivers and streams (e.g. in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock basins, and sewage treatment plants. They prefer aquatic habitat with refugia such as undercut banks and submerged vegetation (Holland 1994), and require emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature (Holland 1994, Bash 1999). Pond turtles are omnivorous and feed on a variety of aquatic and terrestrial invertebrates, fish, amphibians and aquatic plants.

Western pond turtles regularly utilize upland terrestrial habitats, most often during the summer and winter, especially for oviposition (females), overwintering, seasonal terrestrial habitat use, and overland dispersal (Holland 1994). Females have been reported ranging as far as 500 meters (1,640 feet) from a watercourse to find suitable nesting habitat (Reese and Welsh 1997). Nest sites are most often situated on south- or west-



facing slopes, are sparsely vegetated with short grasses or forbs, and are scraped in sands or hard-packed, dry, silt or clay soils (Holland 1994, Rathbun et al. 1992, Reese and Welsh 1997). Western pond turtles exhibit high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese 1996).

Females lay their clutch as early as late April in southern and central California to late July, although they predominantly lay in June and July. In the early morning or late afternoon, gravid females leave the water and move upland to nest (Holland 1994). Natural incubation times vary, ranging from 80 to 100 or more days in California. In northern California and Oregon, hatchlings remain in the nest after hatching and overwinter, emerging in the spring. In southern and central California, those that do not overwinter emerge from the nest in the early fall (Holland 1994).

#### *Occurrence Data and Habitat Suitability*

Five occurrences of western pond turtle exist within five miles of the study area. The nearest CNDDDB occurrence of western pond turtle was recorded in an unspecified year (EONDX #615) approximately two miles southeast of the study area. One additional occurrence was recorded in 1992 at San Pablo Reservoir 2.9 miles southeast (CDFW 2022f). Suitable upland habitat exists within portions of the study area located near aquatic habitat such as Wildcat Creek and the stock pond north of the study area.

#### *Potential Project Related Effects*

Grading for trail construction and any other ground-disturbing activities associated with the project could result in injury or mortality to individual western pond turtle that may be present within the trail alignment. Impacts to western pond turtle potentially occurring onsite will be avoided through implementation of avoidance and minimization measures, including preconstruction surveys and biological monitoring.

### **4.4.4 BIRDS**

Two special status bird species were determined to have the potential to occur within the study area. These species are discussed below, along with a general discussion of all migratory birds.

#### **Cooper's Hawk (*Accipiter cooperii*)**

##### *Status, Distribution and Habitat Requirements*

The Cooper's hawk (nesting) is included on the CDFW Watchlist (CDFW 2022e). Their range extends across the contiguous United States extending into southern Canada and Mexico and are distributed throughout most of California (Curtis *et al.* 2006). Inhabits dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water and suburban areas (Baicich & Harrison 2005). This woodland raptor hunts in broken woodlands, along forest edges and suburban areas for medium-sized birds and mammals (Curtis *et al.* 2006). Typical nest site selection is characterized by mature trees with significant canopy cover; although, species will nest in suburban areas in a variety of trees (Curtis *et al.* 2006). Breeding begins in April and are single-brooded (Baicich & Harrison 2005).

##### *Occurrence Data and Habitat Suitability*

There are no CNDDDB occurrences of Cooper's hawk within 5 miles of the study area. However, eBird data shows frequent sighting of this species in the area (eBird 2022). The study area lacks any nesting habitat for Cooper's hawk because it is located entirely within open grassland and lacks any trees. However, they may nest in nearby oak woodland habitats, and could forage anywhere within the study area.

##### *Potential Project Related Effects*

See 'Potential Project Related Effects for all Migratory Birds' below.

### **White-Tailed Kite (*Elanus leucurus*)**

#### *Status, Distribution, and Habitat Requirements*

The white-tailed kite is a California Fully Protected Species. In California, the white-tailed kite is a yearlong resident in coastal and valley lowlands, where it inhabits herbaceous and open stages of most habitat types. It is rarely found away from agricultural areas (CDFW 2014). Nest sites are usually located immediately adjacent to preferred foraging areas and are often in a single, isolated tree (Glover 2009) or near riparian corridors (Niemela 2007). White-tailed kites prey mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. They forage in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands.

By the 1940's the white-tailed kite had become restricted to a few sites in California due to habitat loss, shooting, and possibly egg collecting. Since then, however, the range and size of the population has increased substantially. Factors influencing population trends directly or indirectly include: (1) conversion of natural or agricultural lands to urban sprawl or commercial properties, (2) clean farming techniques that leave few residual vegetation areas for prey, (3) increased competition for nest sites with corvids and other raptors, (4) drought, (5) increased disturbance at nests, and (6) removal of suitable nesting habitat (Dunk 2020).

#### *Occurrence Data and Habitat Suitability*

Two CNDDDB occurrences of white-tailed kite exist within 5 miles of the study area (CDFW 2022f). One record (EONDX # 6245) exists from Brooks Island approximately 4.6 miles west of the study area from 1990. The other record (EONDX # 6265) stems from Wildcat Creek Marsh, located 4.9 miles northwest in Richmond. Moreover, white-tailed kites are ubiquitous throughout the greater San Francisco Bay Area (eBird 2022).

Suitable nesting habitat for white-tailed kites is present in trees in the oak woodland habitat adjacent to the study area, as well as the in the riparian habitat along Wildcat Creek located west of the study area. White tailed kites may also forage anywhere within the grasslands in the study area, though they are not expected to nest on site due to the lack of trees. This species is quite common in Contra Costa County, and has a high potential to occur.

#### *Potential Project-Related Effects*

See 'Potential Project Related Effects for all Migratory Birds' below.

### **Migratory Birds**

In addition to the special status bird species discussed above, numerous bird species that have no special status may also occur within the study area. Protection is afforded to these species by the Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA) administered by the U.S. Fish and Wildlife Service (Division of Migratory Bird Management), which makes it unlawful, unless expressly authorized by permit pursuant to federal regulations, to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird.” This includes direct and indirect acts, with the exception of harassment and habitat modification, which are not included unless they result in direct loss of birds, nests or eggs. In addition, the Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108-447; MBTRA), excludes all migratory birds non-native or that have been human introduced to the U.S. or its territories. It defines a native migratory bird as a species present within the U.S. and its territories as a result of natural biological or ecological processes. Birds receive further

protection under state law through California Fish and Game Code §3503, prohibiting the take, possession, or needless destruction of the nest or eggs of any bird; §3503.5 prohibiting the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); §3511 prohibiting the take or possession of fully protected birds; and §3513 prohibiting the take or possession of any migratory nongame bird or part thereof as designated in the federal MBTA. Most birds are protected under the MBTA and California Fish and Game Code except for several nonnative species, including the European starling (*Sturnus vulgaris*) and the house sparrow (*Passer domesticus*).

*Potential Project Related Effects for all Migratory Birds*

For any bird species that are nesting within the study area, construction actions associated with the project could result in short-term impacts such as failure to breed, nest abandonment, reduced fecundity and decreased survivorship from noise and movement of personnel and equipment that exceeds normal background conditions within the study area. Disturbance may alter the bird's behavior in ways that result in injury, mortality and reduced foraging success, such as the temporary loss of habitat due to avoidance of areas that have suitable habitat but intolerable levels of disturbance, and altered activity patterns.

If work activities cannot be timed to avoid the breeding season then pre-construction surveys for nesting bird species will be conducted as detailed in Section 5.2 to minimize impacts to this species. Active nests will be avoided and a non-disturbance buffer zone will be established around them. Therefore, the project will not adversely affect migratory bird species.

## Section 5. CONCLUSIONS, AVOIDANCE AND MINIMIZATION MEASURES

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### 5.1. CONCLUSIONS AND RESULTS

#### 5.1.1 CRITICAL HABITAT

The project occurs in Santa Cruz tarplant Critical Habitat Unit A, and Alameda whipsnake Critical Habitat Unit 1 and contains PCE 2 (woodland or annual grassland plant communities contiguous to lands containing PCE 1) (Figure 10; USFWS 2002c, 2006). Given the small scope of the project and lack of permanent impacts, there will be a negligible impact to Santa Cruz tarplant and Alameda whipsnake Critical Habitat. It should be noted that Unit A of Santa Cruz Tarplant Critical Habitat encompasses a reintroduced population of Santa Cruz tarplant (CNDDDB EONDX # 7419) that is routinely monitored by District staff. Neither direct nor indirect impacts are expected for this population based on the current project description, distance from trails, and landscape position.

#### 5.1.2 SENSITIVE NATURAL COMMUNITIES

During the 2022 surveys, no sensitive natural communities currently recognized by CDFW (2022a) were observed within the study area.

#### 5.1.3 SPECIAL STATUS PLANT SPECIES

Based on a review of available databases and literature (USFWS 1999, 2014, 2022; CDFW 2022b, d, f; CNPS 2022; Baldwin et al. 2012); familiarity with the regional flora; and presence of specific vegetation types, a total of twelve special status plant species were determined to have the potential to occur in the study area and were targets of the 2022 protocol-level rare plant surveys. Surveys for these twelve target species were conducted during the appropriate periods in 2022. None of these species were observed within the study area. A summary of the survey results is presented in Table 8.

#### Locally Rare Plant Species

Although two locally rare plants were observed in the study area, they are not A-Ranked species and therefore are not considered regulatorily significant.

#### Invasive Plants of Concern

Three invasive plants of concern were observed within the study area; poison hemlock (*Conium maculatum*), artichoke thistle (*Cynara cardunculus* subsp. *flavescens*), and Bermuda buttercup (*Oxalis pes-caprae*). All of them have a Cal-IPC threat ranking of Moderate and artichoke thistle is on the CDFA Noxious Weed List.

#### 5.1.4 SPECIAL STATUS WILDLIFE

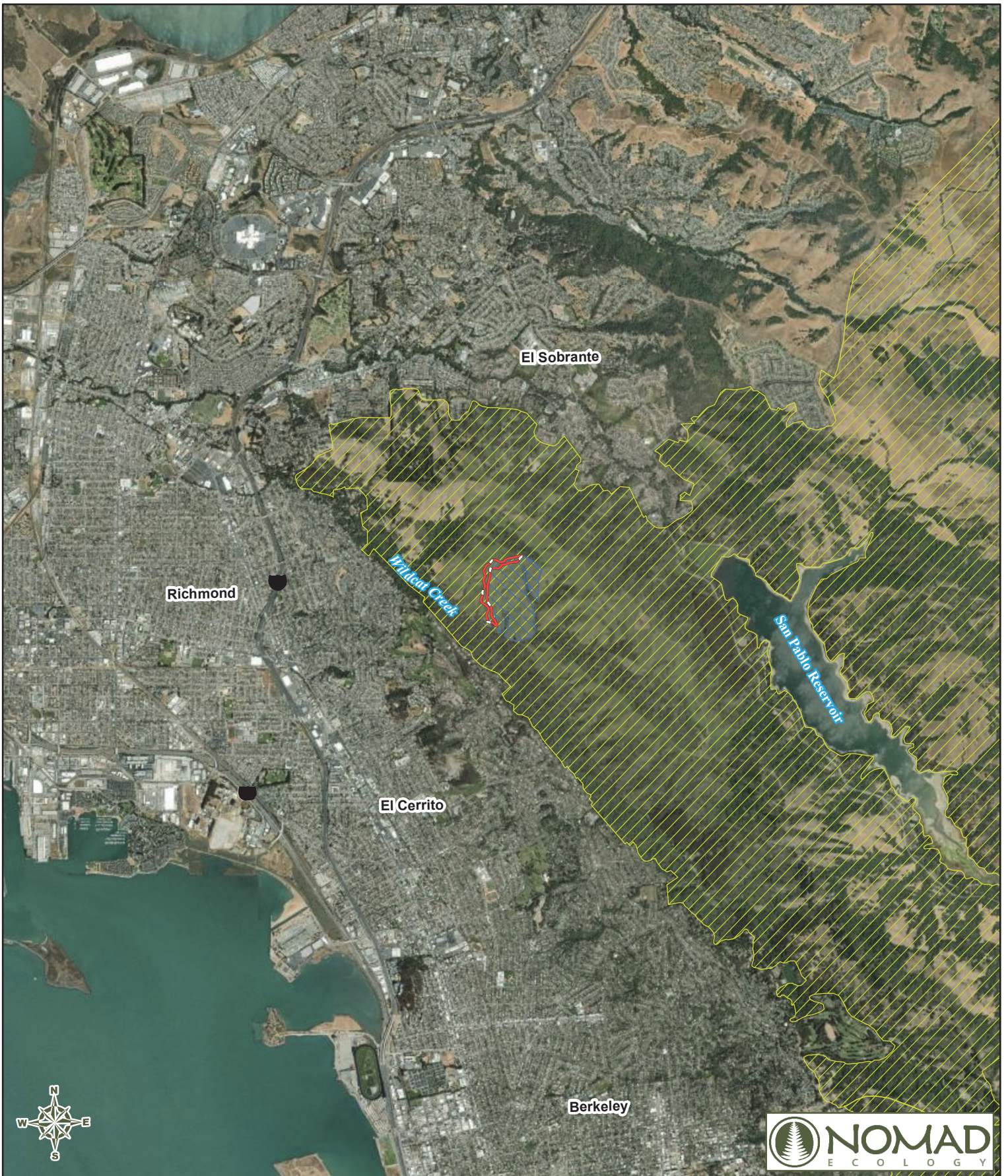
Based on the field investigations, review of available databases and literature, familiarity with local fauna, and on-site habitat suitability, 9 special status wildlife species were determined to have the potential to occur within the study area. These include obscure bumble bee, Crotch bumble bee, western bumble bee, Bridges' Coast Range shoulderband snail, California red-legged frog, Alameda whipsnake, western pond turtle, Cooper's hawk, and white-tailed kite.



### **5.1.5 WILDLIFE HABITAT AND MOVEMENT CORRIDORS**




The new trail alignment passes through grassland areas that are comparatively undisturbed and will channel mountain bikers into areas where humans previously had little direct presence. This may cause additional disturbance within these areas, and reduce wildlife use in the vicinity of the new trail. However, given the heavy recreational use of Wildcat Canyon Regional Park and the proposed trail alignment's close proximity to the existing Mezue Trial, human disturbance is not expected to increase substantially over the existing conditions of the site. No significant impacts to wildlife movement corridors are anticipated as the project will not introduce any physical barriers, and the study area will be available for species to move through after completion of the trail. Most wildlife species will be able to leave the project site on their own once work starts and therefore should not be impacted during construction. There is a chance that less mobile ground-dwelling species such as western fence lizard could be impacted during construction, but these species are relatively abundant, and their individual loss would not be considered significant. Preconstruction surveys for nesting birds and common wildlife as detailed below will minimize impacts to migratory birds and common wildlife species.



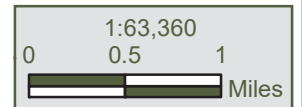


November 2022

Biological Resource Assessment

Legend	
	Study Area
	Santa Cruz tarplant Critical Habitat - Unit A
	Alameda whipsnake Critical Habitat - Unit 1

**Figure 10**  
Critical Habitat Within the Study Area  
 Wildcat Canyon Flow Bike Trail Project  
 East Bay Regional Park District



Sources: ESRI, EBRPD, USFWS



## 5.2. AVOIDANCE AND MINIMIZATION RECOMMENDATIONS

The following avoidance and minimization recommendations are based on our assessment of biological resources within the study area. Additional measures may be required by regulatory agencies during the permitting process for potential project impacts to special status wildlife species. No impacts to aquatic resources are expected, and therefore no permits from the U.S. Army Corps of Engineers or Regional Water Quality Control Board are anticipated to be required.

### 5.2.1 SPECIAL STATUS WILDLIFE

The following avoidance and minimization measures outlined below are recommended.

#### General Special Status Wildlife Measures

- Preconstruction surveys for special status and common wildlife species should be conducted within the study area by a qualified biologist immediately prior to equipment or material staging, vegetation removal, grading, and any other ground-disturbing activities. The qualified biologist will search the area for special status and common wildlife species and individuals will be relocated outside of the study area if the qualified biologist is permitted to do so and determines that relocation is warranted. If special status species are found, regulatory agencies should be consulted for guidance.
- A qualified biologist should conduct an education program covering all the sensitive resources with potential to occur in the study area and the avoidance and minimization measures requiring implementation for all project personnel prior to the start of construction activities.

#### Migratory Birds

- If tree or vegetation removal, pruning, or grubbing activities are necessary, if practical, such activities should be conducted between September 1 and January 31, outside of the nesting season.
- If project construction begins during the nesting season (February 1 – August 31), pre-construction surveys should be conducted by a qualified biologist within the study area and should encompass adjacent habitats up to 300 feet from the project boundary, no more than one week prior to equipment or material staging, pruning/grubbing or ground-disturbing activities. The surveys will entail a variety of search techniques, as described by Martin and Geupel (1993). These include incidental flushing of an adult from the nest, watching parental behavior (e.g., carrying nest material or food), systematically searching nesting substrates, and use of call-broadcasts. If no active nests are found within the survey area, no further action is necessary.
- If active nests, i.e. nests with eggs or young present, are found within the survey area, non-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and the type/duration of potential disturbance. No work should occur within the non-disturbance buffers until the young have fledged as determined by a qualified biologist. If buffers are established and it is determined that project activities are resulting in nest disturbance, work in the nearby vicinity of the nest should cease immediately and CDFW and USFWS Migratory Bird Permit Office should be contacted for further guidance.

### 5.2.2 GENERAL AVOIDANCE AND MINIMIZATION RECOMMENDATIONS

- A qualified biologist should be on site to ensure implementation of, and compliance with, all avoidance measures throughout the duration of construction. If a special status species is observed

then construction should be halted until the species leaves the site on its own volition. If the species does not leave on its own, then it should be relocated to nearby suitable habitat by a biologist permitted to do so by the regulatory agencies.

- Prior to the start of construction within areas containing sensitive biological resources such as aquatic features or other sensitive wildlife habitats, the resources should be delineated and conspicuously flagged to prevent impacts. If required, setback or non-disturbance buffer zones around these resources should be established and monitored by a biologist.
- If feasible, the California poppy – lupine fields should be avoided, even though they lack conservation status, to continue to be a source of native seed in the area.
- All trash should be placed in secure containers with secure lids and removed from the site daily.
- Trash dumping, firearms, open fires, and pets should be prohibited in the construction area.
- A plan will be prepared that will identify Best Management Practices (BMPs) for erosion and sediment control and non-stormwater and material management to be implemented during construction; this will minimize impacts to sensitive habitats. At a minimum, the following BMPs will be implemented:
  - All equipment will be properly maintained and free of leaks. Servicing and maintenance areas will be adequately contained to prevent spills from entering the riparian habitat. Spill containment kits will be kept on site at all times during construction operations and/or staging or fueling of equipment.
  - Erosion and sediment control measures for graded areas will include a combination of silt fences, fiber rolls, etc. as appropriate along toes of slopes or along edges of staging areas. No materials that use plastic or synthetic mono-filament netting will be used to avoid wildlife from getting entangled.
  - Any areas temporarily disturbed by project construction, such equipment staging areas, will be re-vegetated with an appropriate mixture of native seeds. Seeded areas will be blanketed with the appropriate erosion control material that will not entangle or trap wildlife (i.e., tightly-woven, non-mono-filament netting).



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## **APPENDIX A LAWS, ORDINANCES & REGULATIONS**

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## Laws, Ordinances & Regulations

### FEDERAL REGULATIONS

#### *FEDERAL ENDANGERED SPECIES ACT (FESA)*

The Federal Endangered Species Act of 1973, as amended (FESA), was created to “conserve the ecosystems upon which endangered and threatened species depend.” The U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service have authority over projects that may result in a “take” of a species listed as threatened or endangered under the FESA. Under the FESA, plant and wildlife species, including all lower taxa including subspecies and varieties, are listed threatened or endangered based on (A) the present or threatened destruction, modification, or curtailment of their habitat or range, (B) overutilization for commercial, recreational, scientific, or educational purposes, (C) disease or predation, (D) the inadequacy of existing regulatory mechanisms, or (E) other natural or manmade factors affecting their continued existence. FESA listing categories include endangered, threatened and candidates for listing. FESA provides protection for species listed as endangered, and prohibits the “take” of such species in areas under federal jurisdiction or in violation of state law. A “take” is defined as any action to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Species listed as threatened do not warrant listing as endangered and are not provided the same protection under Section 9; however, USFWS often applies the same protection as authorized by Section 4(d) of the FESA. Section 4(d) also allows for exceptions to the take rule under special circumstances. If a project would result in a take of a federally listed species, either an incidental take permit, under Section 10(a) of the FESA, or a federal interagency consultation under Section 7 of FESA, is required prior to the take. Current inventories published for species listed under the FESA include the *Endangered and Threatened Wildlife and Plants* (USFWS 1999a), *Endangered and Threatened Wildlife and Plants; Review of Native Species That are Candidates or Proposed for Listing as Endangered or Threatened*; *Annual Notice of Findings on Resubmitted Petitions*; *Annual Description of Progress on Listing Actions*; , *Endangered and Threatened Species*; *Establishment of Species of Concern List, Addition of Species to Species of Concern List, Description of Factors for Identifying Species of Concern, and Revision of Candidate Species List Under the Endangered Species Act* (NOAA 2004).

#### *CLEAN WATER ACT OF 1977*

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) have jurisdiction over “Waters of the United States, which include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the United States include marine waters, tidal areas, and stream channels. Under federal regulations, wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” [33 C.F.R. §328.3(b)]. Presently, to be considered a wetland, a site must exhibit three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the “normal circumstances” for the site.

Wetlands that are non-navigable, isolated, and intrastate only may not be subject to USACE jurisdiction under Section 404 of the CWA, pursuant to the “SWANCC” decision, *Solid Waste Agency of Northern Cook County vs. United States Army Corps of Engineers* (2001) 531 U.S. 159. Although isolated wetlands may not be subject to USACE jurisdiction under Section 404, they are considered “waters of the State” under California’s Porter-Cologne Water Quality Control Act (Cal. Water Code §§ 13020, et seq.) and, as

such, are subject to regulation by Regional Water Quality Control Boards (RWQCB). There are nine RWQCBs under the State Water Resources Control Board.

Policies regulating the loss of wetlands generally stress the need to compensate for wetland acreage losses by creating wetlands from non-wetland habitat on at least an acre-for-acre basis. That is, mitigation requiring a no-net-loss of wetland functions and values is typically required. Projects that cause the discharge of dredged or fill materials in Waters of the United States require permitting by the USACE. Actions affecting small areas of jurisdictional Waters may qualify for a Nationwide Permit, provided conditions of the permit are met (such as avoiding impacts to threatened or endangered species or to important cultural sites). Projects that do not meet the Nationwide Permit conditions, or projects that disturb a larger area, require an Individual Permit. The process for obtaining an Individual Permit requires a detailed alternatives analysis and development of a comprehensive mitigation/monitoring plan.

Section 401 of the Clean Water Act is discussed below.

#### ***WATERS OF THE UNITED STATES***

“Waters of the United States”, which includes “wetlands” and “other waters”, are defined by 33 CFR §328.3 as follows:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All “other waters” such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
  - which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - which are used or could be used for industrial purpose by industries in interstate commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified above.
- The territorial seas.
- Wetlands adjacent to waters (other than wetlands) identified above.

The Corps generally does not consider the following waters to be “waters of the United States.” However, the Corps reserves the right on a case-by-case basis to determine that a particular water body within these categories of waters is a water of the United States. The Environmental Protection Agency also has the right to determine on a case-by-case basis if any of these waters are “waters of the United States.”

- Non-tidal drainage and irrigation ditches excavated on dry land.
- Artificially irrigated areas which would revert to upland if the irrigation ceased.
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.

- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- Water filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States [see 33 CFR 328.3(a)].

#### Wetlands

Corps jurisdictional “wetlands”, as defined by 33 CFR §328.3(b), are those areas which are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

#### Ordinary High Water Mark

The Corps’ jurisdiction over “other waters” extends to the limit of the Ordinary High Water Mark or the upward extent of any adjacent wetland. The Ordinary high water mark, as defined by 33 CFR §328.3(e), is the visible line on the shore/bank established by the fluctuations of water and indicated by physical characteristics such as:

- A clear, natural line impressed on the bank;
- shelving;
- changes in the character of soil;
- destruction of terrestrial vegetation;
- the presence of litter and debris; or
- other appropriate means that consider the characteristics of the surrounding areas.

#### ***RIVERS AND HARBORS ACT***

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers, to construct any structure in or over any “navigable water of the United States.” Structures or work outside the limits defined as navigable waters requires a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States. It includes without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (*e.g.* riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction.

Navigable waters are generally defined as waters of the United States that are subject to the ebb and flow of the tide, shoreward to the mean high water mark, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce, as defined in 32 CFR §322.2(a).

#### ***MIGRATORY BIRD TREATY ACT (MBTA)***

The Migratory Bird Treaty Act (16 U.S.C. 703-712), administered by the U.S. Fish and Wildlife Service, implements four treaties between the United States and Canada, Mexico, Japan and Russia, respectively, to manage and conserve migratory birds that cross national borders. The Migratory Bird Treaty Act makes it unlawful in any manner, unless expressly authorized by permit pursuant to federal regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to barter, barter,

offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird. The definition of “take” is defined as any act to “pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect.” This includes most actions, direct and indirect, that could result in “take” or possession, whether it is temporary or permanent, of any protected species (APLIC and USFWS 2005d). Although harassment and habitat modification do not constitute a take in themselves under the Migratory Bird Treaty Act or Fish and Game Code, such actions that result in direct loss of birds, nests or eggs including nest abandonment or failure are considered take under such regulations. A list of migratory birds protected under the Migratory Bird Treaty Act, available in Section 10.13 of Title 50 of the Code of Federal Regulation, excludes nonnative species that have not been introduced into the U.S. or its territories, and species that belong to the families not listed in any of the four treaties underlying the Migratory Bird Treaty Act, such as wrenit (*Chamaea fasciata*), European starling (*Sturnus vulgaris*), California quail (*Callipepla californica*), Ring-necked Pheasant (*Phasianus colchicus*) and Chukar (*Alectoris chukar*), among other species less common in California.

On December 8, 2004 the U.S. Congress passed the Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108–447; MBTRA), which excludes all migratory birds nonnative or have been human introduced to the U.S. or its territories. It defines a native migratory bird as a species present within the U.S. and its territories as a result of natural biological or ecological processes. The USFWS published a list of the bird species excluded from the Migratory Bird Treaty Act on March 15, 2005 (70 FR 12710), which included two species commonly observed in the U.S., the rock pigeon (*Columba livia*) and domestic goose (*Anser anser ‘domesticus’*).

#### **BALD AND GOLDEN EAGLE PROTECTION ACT**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; June 8, 1940) as amended, provides protection for the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession and commerce of such birds, their nests, eggs or feathers unless expressly authorized by permit pursuant to federal regulations. The Act also provides criminal and civil penalties for violations of the Act and defines take as any action to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.

## **STATE REGULATIONS**

#### **CALIFORNIA ENDANGERED SPECIES ACT (CESA)**

The California Endangered Species Act of 1984, administered by the California Department of Fish and Wildlife (CDFW), recognizes that certain species of fish, wildlife and plants are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors. The Legislature recognized that these species of fish, wildlife and plants are of ecological, educational, historical, recreational, aesthetic, economic and scientific value to the people of the state, and the conservation, protection and enhancement of these species and their habitat is of statewide concern. The CESA built on the California Native Plant Protection Act (NPPA) (discussed below) and increased regulatory protection for plant species to parallel the CESA. Listing categories under the CESA include endangered, threatened, rare or candidate for listing (Cal. Fish and Game Code §§ 2062, 2067 and 2068). The current inventories published for plants listed under the CESA are the *State and Federally Listed Endangered, Threatened and Rare Plants of California* CDFW (2015d) and the *Special Vascular Plants, Bryophytes and Lichens List* CDFW (2015b).



Current inventories for fish and wildlife species include *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2015c) and the *Special Animals* (CDFW 2015e).

CESA requires state agencies to consult with the CDFW when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. It directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species.

CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize a taking through an incidental take permit, if the impacts of the take are minimized and fully mitigated. Mitigation often takes the form of an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy. CDFW requires preparation of mitigation plans in accordance with published guidelines.

#### ***CALIFORNIA FISH AND GAME CODE***

The California Fish and Game Code provides protection for California’s plant and wildlife species and precludes taking of species listed as fully protected by the CDFW. Section 86 defines take as any action to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. Unless expressly authorized under Chapter 1.5, Article 3, Section 2081, which outlines exceptions for taking of endangered and threatened species, endangered, threatened and fully protected species shall not be taken for any purpose. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird; §3503.5 prohibits the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); §3511 prohibits the take or possession of fully protected birds; and §3513 prohibits the take or possession of any migratory nongame bird or part thereof as designated in the Migratory Bird Treaty Act. Section 4700 provides protection for fully protected mammals unless expressly authorized under §2081.7. Fully protected mammals include Morrow Bay kangaroo rat, bighorn sheep, except Nelson bighorn sheep (*Ovis canadensis nelsoni*), northern elephant seal, Guadalupe fur seal, ring-tailed cat, Pacific right whale, salt-marsh harvest mouse, southern sea otter and wolverine. Section 5050 provides protection for fully protected amphibians and reptiles unless expressly authorized under §2081.7. Fully protected amphibians and reptiles include blunt-nosed leopard lizard, San Francisco garter snake, Santa Cruz long-toed salamander, limestone salamander and black toad. Section 5515 provides protection for fully protected fish unless expressly authorized under §2081.7. Fully protected fish include Colorado River squawfish, thicktail chub, Mohave chub, Lost River sucker, Modoc sucker, shortnose sucker, humpback sucker, Owens River pupfish, unarmored threespine stickleback and rough sculpin.

#### ***PORTER-COLOGNE WATER QUALITY CONTROL ACT AND SECTION 401 OF THE CLEAN WATER ACT***

The Regional Water Quality Control Board administers both the Porter-Cologne Water Quality Control Act and Section 401 of the Clean Water Act. The Porter-Cologne Water Quality Control Act requires “any person discharging waste, or proposing to discharge waste, within any region that could affect the ‘waters of the State’ to file a report of discharge” with the RWQCB (Cal. Water Code Section 13260). Waters of the State are “any surface water or groundwater, including saline waters, within the boundaries of the state” [Cal. Water Code Section 13050(e)].

Pursuant to Section 401 of the Clean Water Act, the RWQCBs consider waters of the State to include (without limitation) rivers, streams, lakes, bays, marshes, mudflats, unvegetated seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked bay lands, seasonal wetlands,

and riparian woodlands. The RWQCBs have also claimed jurisdiction and exercised discretionary authority over “isolated waters”, as discussed above.

***NATIVE PLANT PROTECTION ACT (NPPA)***

The Native Plant Protection Act of 1977, which is implemented by the CDFW, was created to “preserve, protect and enhance rare and endangered plants in this State.” The NPPA gave the CDFW the authority to designate native plants as endangered or rare and to regulate, through permits, activities such as collecting, transporting, or selling plants protected by the NPPA. The NPPA also provides the definitions of native, threatened and endangered plants in Section 1901 of the California Fish and Game Code.

***CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)***

The California Environmental Quality Act of 1970 requires public agencies to evaluate the environmental implications of their actions, and to prevent environmental effects by avoiding or reducing significant impacts of their decisions, where feasible. CEQA was intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. In enacting CEQA, the Legislature expressed a policy that public agencies should not approve projects as proposed if there are such feasible alternatives or mitigation measures. Among its goals, CEQA was intended “to preserve for future generations representations of all plant and animal communities” (Cal. Pub. Res. Code §21001c). Through this process impacts and mitigation to state and federally listed plant species are discussed.-

The California Native Plant Society (CNPS) has developed and maintains an inventory of rare, Threatened and Endangered plants of California. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. The inventory presents a ranking system for rare plants within the state known as California Rare Plant Ranks. The CNPS inventory is endorsed by the CDFW and effectively serves as its list of “candidate” plant species. The following identifies the definitions of the California Rare Plant Ranks:

- Rank 1A: Plants presumed to be extinct in California;
- Rank 1B: Plants that are rare, Threatened, or Endangered in California and elsewhere;
- Rank 2: Plants that are rare, Threatened, or Endangered in California, but are more numerous elsewhere;
- Rank 3: Plants about which more information is needed (a review list): and
- Rank 4: Plants of limited distribution (a watch list).

Rank 1B and 2 species are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code. As part of the CEQA process, such species should be fully considered, as they meet the definition of Threatened or Endangered under the NPPA and Sections 2062 and 2067 of the California Fish and Game Code. Rank 3 and 4 species are considered to be either plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2001), as some of these species may meet NPPA and CESA criteria as Threatened or Endangered.

In addition, CEQA requires that impacts to “resources that are rare or unique to that region” be evaluated [CEQA Guidelines 15125(c)]. This includes botanical resources that are, but not limited to, peripheral populations and disjunct subpopulations. These are informal terms that refer to those species that might be declining or be in need of concentrated conservation actions to prevent decline, but have no legal protection

of their own. Also, CEQA Guidelines Section 15380 states “a species not included in any listing...shall nevertheless be considered to be rare or Endangered if the species is likely to become Endangered within the foreseeable future throughout all or a significant portion of its range and may be considered Threatened as that term is used in the ESA.”

## APPENDIX B SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY

SPECIES NAME COMMON NAME	FEDERAL, STATE, CNPS LISTING <sup>1</sup>	HABITAT PREFERENCES, DISTRIBUTION INFORMATION, & ADDITIONAL NOTES*	FLOWERING PHENOLOGY/ LIFE FORM	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<b>FEDERAL/STATE ENDANGERED OR THREATENED AND CALIFORNIA RARE SPECIES</b>					
<i>Arctostaphylos franciscana</i> Franciscan manzanita	FE None 1B.1	Occurs on serpentine outcrops in chaparral and coastal scrub at elevations between 60 and 300 meters. Single plant rediscovered in 2009. Previously considered extinct since 1947. Seriously threatened by road construction. Known only from SFO county.	February-April evergreen shrub	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest extant CNNDDB occurrence (EONDX # 78531) is a specific record located in the San Francisco Presidio approximately 13 miles southwest of the study area. The single individual at this occurrence was translocated in 2010.	Not Expected
<i>Arctostaphylos montana</i> subsp. <i>ravenii</i> Presidio manzanita	FE SE 1B.1	Occurs on open, rocky serpentine slopes in chaparral, coastal prairie, and coastal scrub at elevations between 45 and 215 meters. Known from only one extant native occurrence at the Presidio in San Francisco; plants there belong to a single clone. Five of six historical occurrences extirpated by urbanization; currently threatened by non-native plants, encroachment of native shrubs, and branch dieback due to fungal pathogen. Known only from SFO county.	February-March evergreen shrub	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest CNNDDB occurrence (EONDX # 20227) is a specific record located in the San Francisco Presidio approximately 13 miles southwest of the study area. This is an outplanting site from cuttings of the single extant wild plant, also in the Presidio.	Not Expected
<i>Arctostaphylos pallida</i> pallid manzanita	FT SE 1B.1	Occurs on uplifted marine terraces on siliceous shale or thin chert in broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, and coastal scrub at elevations between 185 and 465 meters. May require fire for reproduction. Known from fewer than 10 occurrences in the Contra Costa Hills of the Diablo Range. Threatened by alteration of fire regimes, non-native plants, and road construction, and possibly by development, fungal infection, and hybridization. Known from ALA and CCA counties.	December-March evergreen shrub	Suitable vegetation associations are not present in the study area.	None



SPECIES NAME COMMON NAME	FEDERAL, STATE, CNPS LISTING <sup>1</sup>	HABITAT PREFERENCES, DISTRIBUTION INFORMATION, & ADDITIONAL NOTES*	FLOWERING PHENOLOGY/ LIFE FORM	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Arenaria paludicola</i> marsh sandwort	FE SE 1B.1	Occurs in dense mats of <i>Typha</i> spp., <i>Juncus</i> spp., and <i>Scirpus</i> spp. on sandy soil in marshes and swamps at elevations between 3 and 170 meters. Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Threatened by vehicles, development, erosion, hydrological alterations, and non-native plants. Individuals re-introduced in Black Lake Canyon in 1995. Introduced population in Los Osos well established as of 2003. Experimental introduction also underway in Nipomo as of 2004. Collection from Mexico needs confirmation. Known from LAX, MRN, RIV, SBD, SCR, SFO, and SLO counties.	May-August perennial herb	Suitable vegetation associations or hydrology are not present in the study area.	None
<i>Calochortus tiburonensis</i> Tiburon mariposa-lily	FT ST 1B.1	Occurs on open, rocky, slopes in serpentine valley and foothill grassland at elevations between 50 and 150 meters. Known from only one occurrence at Ring Mountain Preserve on the Tiburon Peninsula. Threatened by recreational activities and non-native plants. Potentially threatened by deer browsing. Known from MRN counties.	March-June perennial herb (bulbiferous)	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest CNNDDB occurrence (EONDX # 12396) is a specific record located on Ring Mountain Preserve in Tiburon approximately 10.6 miles west of the study area.	Not Expected
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	FE ST 1B.2	Occurs on rocky serpentine sites in valley and foothill grassland at elevations between 60 and 400 meters. Threatened by development, gravel mining, grazing, and non-native plants. Known from MRN, NAP, and SCL counties.	April-June perennial herb (hemiparasitic)	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest CNNDDB occurrence (EONDX # 9456) is a specific record located at Old Saint Hillary's Preserve on the Tiburon peninsula approximately 9.4 miles west-southwest of the study area.	Not Expected
<i>Chloropyron molle</i> subsp. <i>molle</i> soft salty bird's-beak	FE SR 1B.2	Occurs in coastal salt marshes and swamps with <i>Distichlis</i> spp., <i>Salicornia</i> spp., and <i>Frankenia</i> spp. at elevations between 0 and 3 meters. Threatened by non-native plants, erosion, feral pigs, trampling, foot traffic, urbanization, and marsh drainage. Known from CCA, MRN, NAP, SAC, SOL, and SON counties.	June-November annual herb	No suitable vegetation associations or hydrology are present in the study area.	None

SPECIES NAME COMMON NAME	FEDERAL, STATE, CNPS LISTING <sup>1</sup>	HABITAT PREFERENCES, DISTRIBUTION INFORMATION, & ADDITIONAL NOTES*	FLOWERING PHENOLOGY/ LIFE FORM	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	FE None 1B.1	Occurs on sandy terraces and bluffs or on loose sand in chaparral, cismontane woodland, coastal dunes, and coastal scrub at elevations between 3 and 300 meters. Most populations extirpated, and now known from only six extended occurrences. Threatened by development, recreation, mining, and non-native plants. Known from ALA, SCL, SCR, SFO, and SMT counties.	April-September annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Clarkia franciscana</i> Presidio clarkia	FE SE 1B.1	Occurs on serpentine outcrops in coastal scrub and valley and foothill grassland at elevations between 25 and 335 meters. Threatened by Army activities, vehicles, urbanization and non-native plants. Known from ALA and SFO counties.	May-July annual herb	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest CNNDDB occurrence (EONDX # 13632) is a specific record from Redwood Regional Park in Oakland approximately 11.1 miles south of the study area.	Not Expected
<i>Hesperolinon congestum</i> Marin western flax	FT ST 1B.1	Occurs in serpentine barrens and in serpentine chaparral and valley and foothill grassland at elevations between 5 and 370 meters. Protected in part at Ring Mountain. Preserve, MRN Co. Threatened by development, non-native plants, and foot traffic. Potentially threatened by hydrological alterations. Known from MRN, SFO, and SMT counties.	April-July annual herb	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrates. The nearest CNNDDB occurrence (EONDX # 18629) is a specific record from Old Saint Hillary's Preserve on the Tiburon Peninsula approximately 9.4 miles west-southwest south of the study area.	Not Expected
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT SE 1B.1	Occurs in light, sandy soil or sandy clay in coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 10 and 220 meters. All extant CCA Co. occurrences are introduced; nearly half have failed. Last remaining natural population in the S.F. Bay Area extirpated by development in 1993. Seriously threatened by urbanization, agriculture, non-native plants, and lack of appropriate ecological disturbance. Known from ALA, CCA, MNT, MRN, and SCR counties.	June-October annual herb	Suitable vegetation associations are present in the study area. The study area overlaps with designated critical habitat. CNDDDB occurrence (EONDX # 7421) is a specific record of which one colony overlaps with the northern portion of the study area. All colonies in this occurrence are transplant efforts. Plants have not been observed in the colony that overlaps with the study area since 1985.  The study area overlaps with Critical Habitat Unit A for Santa Cruz tarplant.	Possible  Not observed. Would have been detectable during 2022 protocol level rare plant surveys.

SPECIES NAME COMMON NAME	FEDERAL, STATE, CNPS LISTING <sup>1</sup>	HABITAT PREFERENCES, DISTRIBUTION INFORMATION, & ADDITIONAL NOTES*	FLOWERING PHENOLOGY/ LIFE FORM	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE None 1B.1	Occurs in swales, low depressions, and in open grassy areas of cismontane woodland, playas, valley and foothill grassland, and vernal pools at elevations between 0 and 470 meters. Many historical occurrences extirpated by development and agriculture. Currently threatened by development, habitat alteration, hydrological alterations, overgrazing, and non-native plants. Known from ALA, CCA, MEN, MNT, MRN, NAP, SBA, SCL, SOL, and SON counties.	March-June annual herb	Although suitable vegetation associations are present, the study area lacks the preferred hydrology. The nearest CNNDDB occurrence (EONDX # 29059) is a specific record from near the headwaters of Rodeo Creek near Hercules approximately 5.6 miles north-northwest of the study area.	Not Expected
<i>Layia carnosa</i> beach layia	FE SE 1B.1	Occurs on sparsely vegetated, semi-stabilized coastal dunes and coastal scrub at elevations between 0 and 60 meters. Threatened by coastal development, foot traffic, vehicles, and non-native plants. Known from HUM, MNT, MRN, SBA, SFO, and SMT counties.	March-July annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Lessingia germanorum</i> San Francisco lessingia	FE SE 1B.1	Occurs on remnant dunes and open sandy soils in coastal scrub at elevations between 25 and 110 meters. Known from only four occurrences at the Presidio (SFO Co.), and one on San Bruno Mtn. (SMT Co.). Populations increasing 1994-1998 due to restoration efforts. Much reduced by urbanization; also threatened by trampling, sand quarrying, and non-native plants. Known from SFO and SMT counties.	(June) July- November annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	None SR 1B.1	Occurs in tidal zones, in muddy or silty soil formed through river deposition or river bank erosion in brackish or freshwater marshes and swamps and riparian scrub at elevations between 0 and 10 meters. Locally common in Suisun Bay. Threatened by erosion, channel stabilization, development, flood control projects, recreation, agriculture, shading resulting from marsh succession, and competition with non-native <i>Eichhornia crassipes</i> . Many populations ephemeral, exploiting newly deposited or exposed sediments. Known from ALA, CCA, MRN, NAP, SAC, SJQ, SOL, and YOL counties.	April-November annual herb	Suitable vegetation associations and tidally influenced hydrology are not present in the study area.	None

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<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	FE SE 1B.1	Occurs on open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock in cismontane woodland and valley and foothill grassland at elevations between 35 and 620 meters. Historical occurrences lost to development. Known from MRN, SCR, and SMT counties.	March-May annual herb	Although suitable vegetation associations are present, the study area lacks the preferred serpentine substrate and rocky slopes. The nearest CNNDDB occurrence (EONDX #16686) is a specific record from the San Quentin Peninsula in Marin County approximately 11.2 miles west of the study area. This occurrence is presumed extirpated.	Not Expected
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	None SE 1B.1	Occurs in marine influenced coastal prairie and valley and foothill grassland at elevations between 60 and 360 meters. Threatened by development and non-native plants. Possibly threatened by grazing and vehicles. Known from ALA, SBT, SCR, SFO, and SMT counties.	March-June annual herb	Although suitable vegetation associations are present, the study area is north of the known range of this species. The nearest CNNDDB occurrence (EONDX # 18191) is a specific record from the Oakland Hills approximately 11.5 miles south-southwest of the study area.	Not Expected
<i>Sanicula maritima</i> adobe sanicle	None SR 1B.1	Occurs in moist clay or ultramafic soils in chaparral, coastal prairie, meadows and seeps, and valley and foothill grassland at elevations between 30 and 240 meters. Threatened by foot traffic, non-native plants, recreational activities, trampling, and urbanization. Known from ALA, MNT, SFO, and SLO counties.	February-May perennial herb	Although suitable vegetation associations are present, the study area lacks the preferred serpentine or clay substrates. The nearest CNNDDB occurrence (EONDX # 61072) is a non-specific record from the vicinity of the city of Alameda approximately 11.1 miles south of the study area.	Not Expected
<i>Streptanthus glandulosus</i> subsp. <i>niger</i> Tiburon jewelflower	FE SE 1B.1	Occurs on shallow, rocky serpentine slopes in valley and foothill grassland at elevations between 30 and 150 meters. Known from only two occurrences on the Tiburon Peninsula. Threatened by road construction, trampling, foot traffic, non-native plants, and development. Known only from MRN county.	May-June annual herb	Although suitable vegetation associations are present, the study area lacks the preferred serpentine or clay substrates. The nearest CNNDDB occurrence (EONDX # 13256) is a non-specific record from the vicinity of the city of Alameda approximately 9.5 miles south of the study area.	Not Expected
<i>Suaeda californica</i> California seablite	FE None 1B.1	Occurs on margins of coastal salt marshes and swamps at elevations between 0 and 15 meters. Formerly more widespread in San Francisco Bay Area, where now nearly extirpated by development; currently only known from fragmented populations in San Francisco Bay Area and Morro Bay. Known from ALA, CCA, SCL, SFO, SLO, and VEN counties.	July-October succulent shrub	No suitable vegetation associations or hydrology are present in the treatment areas.	None



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<i>Trifolium amoenum</i> two-fork clover	FE None 1B.1	Occurs sometimes on serpentine soil in open sunny sites and swales in coastal bluff scrub, valley and foothill grassland at elevations between 5 and 415 meters. Rediscovered in 1993 by P. Conners near Occidental; only one plant found, and subsequent surveys in 1994-1995 unsuccessful. Historical habitat lost to urbanization and agriculture. Known from MRN, NAP, SMT, SOL, and SON counties.	April-June annual herb	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 7421) is a non-specific record from the vicinity of Corte Madera approximately 10.8 miles west of the study area	Possible  Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<b>CALIFORNIA NATIVE PLANT SOCIETY LISTED AND LOCALLY RARE SPECIES</b>					
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	None None 1B.2	Occurs in openings of broadleaved upland forest, chaparral, and cismontane woodland at elevations between 50 and 2,000 meters. Threatened by development and habitat alteration. Potentially threatened by road maintenance. Known from LAK, MRN, NAP, and SON counties.	April-July deciduous shrub	No suitable vegetation associations are present in the study area.	None
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	None None 1B.2	Occurs in cismontane woodland, coastal bluff scrub, valley and foothill grassland at elevations between 3 and 500 meters. May occur in SHA and SIS counties. Threatened by development and mining. Possibly threatened by non-native plants. Known from ALA, CCA, COL, LAK, MRN, NAP, SCL, SCR, SFO, SMT, SON, SUT, and YOL counties.	March-June annual herb	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 62470) is a non-specific record from the vicinity of Sobrante Ridge approximately 1.6 miles east of the study area	Possible  Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Androsace elongata</i> subsp. <i>acuta</i> California androsace	None None 4.2	Occurs in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland at elevations between 150 and 1,305 meters. Highly localized and often overlooked; many occurrences extirpated. Possibly threatened by grazing, trampling, non-native plants, alteration of fire regimes, and recreational activities. Potentially threatened by wind energy development. Known from ALA, CCA, COL, FRE, GLE, KRN, LAX, MER, MNT, RIV, SBD, SBT, SCL, SDG, SIS, SJQ, SLO, SMT, STA, and TEH counties.	March-June annual herb	Suitable vegetation associations are present in the study area. The nearest voucher specimen is a 1902 Tracy collection (# 1344) from the Berkeley Hills.	Possible  Not observed. Would have been detectable during 2022 protocol level rare plant surveys.

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<i>Arabis blepharophylla</i> coast rockcress	None None 4.3	Occurs in rocky areas of broadleaved upland forest, coastal bluff scrub, coastal prairie, and coastal scrub at elevations between 3 and 1,100 meters. Threatened by competition. Known from CCA, MNT, MRN, SCR, SFO, SMT, and SON counties.	February-May perennial herb	Although suitable vegetation associations are present in the study area, this taxon is not known to occur off of Mount Diablo in the East Bay. The nearest voucher specimen is an 1892 Jepson collection (# 13386) from Red Rock Island.	Not Expected
<i>Aspidotis carlotta-halliae</i> Carlotta Hall's lace fern	None None 4.2	Occurs on serpentine substrates (usually) in chaparral and cismontane woodland at elevations between 100 and 1,400 meters. Known from ALA, BUT, MNT, MRN, SBT, SCL, and SLO counties.	January- December fern	No suitable vegetation associations or substrates are present in the study area.	None
<i>Astragalus nuttallii</i> var. <i>nuttallii</i> ocean bluff milk-vetch	None None 4.2	Occurs in coastal bluff scrub and coastal dunes at elevations between 3 and 120 meters. Possibly threatened by foot traffic and road maintenance. Known from MNT, MRN, SBA, SFO, SLO, and SMT counties.	January- November perennial herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	None None 1B.2	Occurs in low, alkali flats and flooded lands in playas, valley and foothill grassland, and vernal pools at elevations between 1 and 60 meters. Threatened by development, competition from non-native plants, and habitat destruction, especially agricultural conversion. Known from ALA, CCA, MER, MNT, NAP, SBT, SCL, SFO, SJQ, SOL, SON, STA, and YOL counties.	March-June annual herb	Although suitable vegetation associations are present, the preferred alkaline substrates area absent from the study area. The nearest CNNDDB occurrence (EONDX # 51723) is a non-specific record from Stege approximately 1.2 miles southwest of the study area. This occurrence is based on a 1900 Tracy collection.	Not Expected
<i>Blepharizonia plumosa</i> big tarplant	None None 1B.1	Occurs on clay to clay-loam soils in valley and foothill grassland at elevations between 30 and 505 meters. Seriously threatened by urbanization; also threatened by disking, residential development, and non-native plants. Known from ALA, CCA, SJQ, SOL, and STA counties.	July-October annual herb	Although suitable vegetation associations are present, the preferred clay substrates are absent and the study area is outside of its known range. The nearest CNNDDB occurrence (EONDX # 51042) is a non-specific record from Benicia approximately 9.4 miles northeast of the study area. This occurrence is possibly extirpated.	Not Expected
<i>Calamagrostis ophitidis</i> serpentine reed grass	None None 4.3	Occurs on rocky, serpentine substrate in chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland at elevations between 90 and 1,065 meters. Known from LAK, MEN, MRN, NAP, and SON counties.	April-July perennial grass	Although suitable vegetation associations are present in the study area, the preferred serpentine substrates are absent. The nearest voucher specimen is a 1966 Howell collection (# s.n.) from the Tiburon Peninsula.	Not Expected

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<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	None None 1B.2	Occurs in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland at elevations between 30 and 840 meters. Threatened by grazing, urbanization, horticultural collection, and feral pigs. Potentially threatened by road maintenance. Known from ALA and CCA counties.	April-June perennial herb (bulbiferous)	Although suitable vegetation associations are present, the study area is west of the known range of this species in the East Bay. The nearest CNNDDB occurrence (EONDX # 84636) is a non-specific record from Mount Wanda approximately 8.4 miles east of the study area.	Not Expected
<i>Calochortus umbellatus</i> Oakland star-tulip	None None 4.2	Occurs on serpentine substrates (often) in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations between 100 and 700 meters. Possibly threatened by recreational activities. Known from ALA, CCA, MRN, SCL, and SMT counties.	March-May perennial herb (bulbiferous)	Although suitable vegetation associations are present in the study area, the preferred serpentine substrates are absent. The nearest voucher specimen is a 1929 Morris collection (# s.n.) from Wild Cat Canyon.	Not Expected
<i>Calystegia purpurata</i> subsp. <i>saxicola</i> coastal bluff morning-glory	None None 1B.2	Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and North Coast coniferous forest at elevations between 0 and 105 meters. Threatened by development, foot traffic, and non-native plants. Known from CCA, MEN, MRN, and SON counties.	(March) April- September perennial herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Carex comosa</i> bristly sedge	None None 2B.1	Occurs on lake margins and wet places in coastal prairie, marshes and swamps, and valley and foothill grassland at elevations between 0 and 625 meters. Threatened by marsh drainage and road maintenance. Known from CCA, FRE, LAK, MEN, SAC, SBD, SCR, SFO, SHA, SJQ, SMT, and SON counties.	May-September perennial herb	Although suitable vegetation associations are present, the preferred hydrology is absent from the study area. The nearest CNNDDB occurrence (EONDX # 67249) is a non-specific record mapped to encompass the city of San Francisco approximately 10.2 miles southwest of the study area. This occurrence is based on an 1866 Bolander collection and is presumed extirpated.	Not Expected
<i>Carex praticola</i> northern meadow sedge	None None 2B.2	Occurs in meadows and seeps at elevations between 0 and 3,200 meters. Known from DNT, HUM, LAK, MNO, MRN, SIS, TEH, TRI, and TUO counties.	May-July perennial herb	Although suitable vegetation associations are present, the preferred hydrology is absent from the study area. The nearest CNNDDB occurrence (EONDX # 99855) is a non-specific record from the northeast side of Angel Island approximately 8.5 miles southwest of the study area.	Not Expected

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<i>Castilleja ambigua</i> var. <i>ambigua</i> johnny-nip	None None 4.2	Occurs in coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pools at elevations between 0 and 435 meters. Threatened by development. Known from ALA, CCA, DNT, HUM, MEN, MRN, NAP, SCR, SMT, SOL, and SON counties.	March-August annual herb	Although suitable vegetation associations are present in the study area, the study area does not receive the preferred maritime influence. The nearest voucher specimen is an 1895 Tidestrom collection (# s.n.) from West Berkeley.	Not Expected
<i>Centromadia parryi</i> subsp. <i>congdonii</i> Congdon's tarplant	None None 1B.1	Occurs on alkaline soils in valley and foothill grassland at elevations between 0 and 230 meters. Severely threatened by development. Possibly threatened by grazing and non-native plants. Known from ALA, CCA, MNT, SCL, SCR, SLO, SMT, and SOL counties.	May-October (November) annual herb	Although suitable vegetation associations are present, the preferred alkaline substrates and hydrology are absent from the study area. The nearest CNNDDB occurrence (EONDX # 14135) is a non-specific record from the north of Walnut Creek approximately 11.5 miles east of the study area. This occurrence is presumed extirpated.	Not Expected
<i>Chloropyron maritimum</i> subsp. <i>palustre</i> Point Reyes salty bird's- beak	None None 1B.2	Occurs in marshes and swamps usually with <i>Salicornia</i> spp., <i>Distichlis</i> spp., <i>Jaumea</i> spp., <i>Spartina</i> spp., etc. at elevations between 0 and 10 meters. Once rather common in proper habitat; now greatly reduced by development. Also threatened by foot traffic, non-native plants, hydrological alterations, cattle grazing and trampling. Known from ALA, HUM, MRN, SCL, SFO, SLO, SMT, and SON counties.	June-October annual herb	No suitable vegetation associations or hydrology are present in the treatment areas.	None
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	None None 1B.2	Occurs on sandy soil in coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub at elevations between 3 and 215 meters. Known from ALA, MRN, SFO, SMT, and SON counties.	April-July (August) annual herb	Although suitable vegetation associations are present, the preferred sandy substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 30355) is a non-specific record from "near Oakland" approximately 7.5 miles south of the study area. This occurrence is presumed extirpated.	Not Expected
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	None None 2B.1	Occurs in fresh or brackish water of marshes and swamps at elevations between 0 and 200 meters. Threatened by development, non-native plants, and hydrological alterations. Known from CCA, MRN, SAC, SBA, SOL counties.	July-September perennial herb	No suitable vegetation associations or hydrology are present in the study area.	None



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<i>Cirsium andrewsii</i> Franciscan thistle	None None 1B.2	Occurs in serpentine (sometimes) seeps in broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub at elevations between 0 and 150 meters. Threatened by development and non-native plants. Known from CCA, MRN, SFO, SMT, SON counties.	March-July perennial herb	Although suitable vegetation associations are present, the preferred wetland hydrology and serpentine substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 56757) is a specific record from Lily Spring near San Pablo Ridge approximately 3.7 miles southeast of the study area.	Not Expected
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i> Mt. Tamalpais thistle	None None 1B.2	Occurs in serpentine seeps and streams in broadleaved upland forest, chaparral, and meadows and seeps at elevations between 240 and 620 meters. Known from fewer than 20 occurrences on Mt. Tamalpais. Threatened by road construction and non-native plants. Known from MRN and SFO counties.	May-August perennial herb	Although suitable vegetation associations are present, the preferred wetland hydrology and serpentine substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 102652) is a non-specific record from the San Francisco Presidio approximately 12.5 miles southwest of the study area. This occurrence is based on an 1890 Brandegee collection and is presumed extirpated.	Not Expected
<i>Clarkia concinna</i> subsp. <i>automixa</i> Santa Clara red ribbons	None None 4.3	Occurs on slopes and near drainages in chaparral and cismontane woodland at elevations between 90 and 1,500 meters. Known from ALA, SCL, SCR, and SMT counties.	(April) May-June (July) annual herb	No suitable vegetation associations are present in the study area.	None
<i>Collinsia corymbosa</i> round-headed Chinese- houses	None None 1B.2	Occurs in coastal dunes at elevations between 0 and 20 meters. May intergrade with <i>C. bartsifolia</i> var. <i>bartsifolia</i> . Possibly threatened by foot traffic. Known from HUM, MEN, MRN, SCL, SFO, and SMT counties.	April-June annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Collinsia multicolor</i> San Francisco collinsia	None None 1B.2	Occurs on decomposed shale (mudstone) mixed with humus, sometimes on serpentine, in closed-cone coniferous forest and coastal scrub at elevations between 30 and 275 meters. Threatened by non-native plants, foot traffic and urbanization. Known from MNT, MRN, SCL, SCR, SFO, and SMT counties.	(February) March-May annual herb	No suitable vegetation associations or substrates are present in the study area.	None

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<i>Collomia diversifolia</i> serpentine collomia	None None 4.3	Occurs on gravelly (sometimes), rocky (sometimes), and serpentinite (sometimes) substrates in chaparral and cismontane woodland at elevations between 200 and 600 meters. Possibly threatened by wind energy development and vehicles. Known from CCA, COL, GLE, HUM, LAK, MEN, MRN, NAP, ORA, SHA, SON, STA, TEH, and YOL counties.	May-June annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Dirca occidentalis</i> western leatherwood	None None 1B.2	Occurs on brushy slopes and mesic sites in broadleaved upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, North Coast coniferous forest, riparian forest, and riparian woodland at elevations between 25 and 425 meters. Possibly threatened by road and trail maintenance. Populations declining due to poor reproduction. Known from ALA, CCA, MRN, SCL, SMT, and SON counties.	January-March (April) deciduous shrub	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Eleocharis parvula</i> small spikerush	None None 4.3	Occurs in marshes and swamps at elevations between 1 and 3,020 meters. Known from ALA, CCA, HUM, MRN, NAP, ORA, SLO, SOL, SON, and VEN counties.	(April) June- August (September) perennial herb	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Equisetum palustre</i> marsh horsetail	None None 3	Occurs in marshes and swamps at elevations between 45 and 1,000 meters. Scarcity poorly understood. NAP Co. occurrence located in 1994 is perhaps only the second confirmed in CA. Known from NAP and SFO counties.	Unknown fern	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Eriogonum luteolum</i> var. <i>caninum</i> Tiburon buckwheat	None None 1B.2	Occurs on serpentine soils at sandy to gravelly sites in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland at elevations between 0 and 700 meters. Not clearly distinguishable from var. <i>luteolum</i> north of Tiburon. Threatened by development, foot traffic, and non-native plants. Known from ALA and MRN counties.	May-September annual herb	Although suitable vegetation associations are present, the preferred serpentine substrates are absent from the study area. The nearest CNNDDB occurrence (EONDx # 71282) is a specific record from Old Saint Hillary's Preserve in Marin County approximately 10.4 miles west-southwest of the study area.	Not Expected

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<i>Eryngium jepsonii</i> Jepson's coyote-thistle	None None 1B.2	Occurs on clay soils in valley and foothill grassland and vernal pools at elevations between 3 and 300 meters. Known from ALA, CCA, NAP, SMT, SOL, and YOL counties.	April-August annual herb	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 103678) is a non-specific record from the vicinity of Orinda Park approximately 6.4 miles south of the study area.	Possible Absent. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Erysimum franciscanum</i> San Francisco wallflower	None None 4.2	Occurs in granitic (often) and serpentinite (often) soils in chaparral, coastal dunes, coastal scrub, and valley and foothill grassland at elevations between 0 and 550 meters. Rare and declining in SCR Co. Possibly threatened by recreational activities and non-native plants. Known from MRN, SCL, SCR, SFO, SMT, and SON counties.	March-June perennial herb	Although suitable vegetation associations are present in the study area, this species is not known to occur in the East Bay. The nearest voucher specimen is a 2000 Preston collection (# 1331) from just south of the Waldo Tunnel in Marin County.	Not Expected
<i>Erythranthe nudata</i> bare monkeyflower	None None 4.3	Occurs in serpentine seeps in chaparral and cismontane woodland at elevations between 200 and 700 meters. Known from COL, GLE, LAK, MEN, NAP, SBA, and SON counties.	May-June annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Extriplex joaquinana</i> San Joaquin spearscale	None None 1B.2	Occurs in seasonal alkali wetlands or alkali chenopod scrub, meadows and seeps, playas, and valley and foothill grassland at elevations between 1 and 835 meters. Many occurrences extirpated. Threatened by grazing, agriculture, development, and non-native plants. Known from ALA, CCA, COL, FRE, GLE, MER, NAP, SAC, SBT, SJQ, SLO, SOL, and YOL counties.	April-October annual herb	Although suitable vegetation associations are present, the preferred alkaline substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 62775) is a non-specific record from "Oakland Marshes" mapped around Oakland approximately 7.6 miles south of the study area. This occurrence is based on a 1929 Clark collection and may be extirpated.	Not Expected
<i>Fissidens pauperculus</i> minute pocket moss	None None 1B.2	Occurs on damp soil along the coast in dry streambeds and on stream banks in North Coast coniferous forest at elevations between 10 and 1,024 meters. Known from ALA, BUT, DNT, HUM, MEN, MRN, SCR, SMT, SON, and YUB counties.	moss	No suitable vegetation associations or substrates are present in the study area.	None

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<i>Fritillaria liliacea</i> fragrant fritillary	None None 1B.2	Occurs often on serpentine, various soils reported though usually on clay, in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 3 and 410 meters. Threatened by grazing, agriculture, urbanization, and non-native plants. Possibly threatened by recreational activities and foot traffic. Known from ALA, CCA, MNT, MRN, SBT, SCL, SFO, SMT, SOL, and SON counties.	February-April perennial herb (bulbiferous)	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 14134) is a non-specific record from "near Mira Vista Country Club" in El Cerrito less than 0.1 mile south of the study area. This occurrence is presumed extirpated.	Possible  Absent. Would have been detectable during 2022 protocol level rare plant surveys. Diagnostic vegetative material would be identifiable year-round.
<i>Gilia capitata</i> subsp. <i>chamissonis</i> blue coast gilia	None None 1B.1	Occurs in coastal dunes and coastal scrub at elevations between 2 and 200 meters. Threatened by urbanization, recreational development, and non-native plants. Possibly threatened by trampling. Known from MRN, SFO, and SON counties.	April-July annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Gilia millefoliata</i> dark-eyed gilia	None None 1B.2	Occurs in coastal dunes at elevations between 2 and 30 meters. Threatened by development, vehicles, foot traffic, grazing, and non-native plants. Known from ALA, CCA, DNT, HUM, MEN, MRN, SFO, SMT, and SON counties.	April-July annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	None None 3.2	Occurs on sandy or serpentine slopes and sea bluffs in coastal bluff scrub, coastal scrub, and valley and foothill grassland at elevations between 15 and 400 meters. Plants from MNT and SCR counties need verification. Threatened by coastal development and non-native plants. May be a hybrid between <i>G. hirsutula</i> var. <i>hirsutula</i> and <i>G. stricta</i> var. <i>platyphylla</i> or <i>G. stricta</i> var. <i>angustifolia</i> . Known from MRN, SFO, SLO, and SMT counties.	June-September perennial herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest voucher specimen is a 1933 Howell collection (# 11489) from the San Francisco Presidio.	Not Expected
<i>Helianthella castanea</i> Diablo helianthella	None None 1B.2	Occurs usually in chaparral/oak woodland interface on rocky, azonal soils in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland at elevations between 60 and 1300 meters. Threatened by urbanization, grazing, and fire suppression. Possibly threatened by road maintenance, recreational activities, and non-native plants. Known from ALA, CCA, MRN, SFO, SMT, and SOL counties.	March-June perennial herb	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 51652) is a non-specific record from Kennedy Grove Regional Preserve approximately 1.2 miles east of the study area.	Possible  Absent. Would have been detectable during 2022 protocol level rare plant surveys. Diagnostic vegetative material would be identifiable year-round.



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<i>Hemizonia congesta</i> subsp. <i>congesta</i> congested-headed hayfield tarplant	None None 1B.2	Occurs in valley and foothill grassland at elevations between 20 and 560 meters. Threatened by agriculture, development, and road construction. Possibly threatened by grazing. Hybridizes with <i>H. congesta</i> subsp. <i>lutescens</i> . Known from LAK, MEN, MRN, SFO, SMT, and SON counties.	April-November annual herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest CNNDDB occurrence (EONDX # 73834) is a non-specific record mapped around southern San Francisco approximately 10.2 miles southwest of the study area. This occurrence is based on a historic Brandegee collection and is presumed extirpated.	Not Expected
<i>Hesperervax caulescens</i> hogwallow starfish	None None 4.2	Occurs on alkaline soils (sometimes) in valley and foothill grassland and vernal pools at elevations between 0 and 505 meters. Threatened by development and agriculture. Possibly threatened by overgrazing. Known from ALA, BUT, CCA, COL, FRE, GLE, KRN, MER, MNT, MPA, SAC, SDG, SJQ, SLO, SOL, SON, STA, SUT, TEH, TUO, YOL, and YUB counties.	March-June annual herb	Although suitable vegetation associations are present, the preferred alkaline substrates area absent from the study area. The nearest voucher specimen is a 1936 Ewan collection (# 9496) from Wildcat Creek near Orinda road bridge.	Not Expected
<i>Heteranthera dubia</i> water star-grass	None None 2B.2	Occurs on alkaline soils in still or slow-moving water in marshes and swamps at elevations between 30 and 1,495 meters. Requires a pH of 7 or higher, usually in slightly eutrophic waters. Many occurrences historical and some possibly extirpated; needs field surveys. Known from BUT, COL, MOD, MRN, SFO, SHA, SMT, and SUT counties.	July-October perennial herb (semi-aquatic)	No suitable vegetation associations, hydrology, or substrates are present in the study area.	None
<i>Hoita strobilina</i> Loma Prieta hoita	None None 1B.1	Occurs in mesic sites on serpentine substrates in chaparral, cismontane woodland, and riparian woodland at elevations between 30 and 860 meters. Threatened by urbanization. Possibly threatened by feral pigs and foot traffic. Known from ALA, CCA, SCL, and SCR counties.	May-July (August-October) perennial herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	None None 1B.1	Occurs in openings on sandy or gravelly soils in chaparral, closed-cone coniferous forest, coastal dunes, coastal scrub at elevations between 10 and 200 meters. Threatened by coastal development. Historical occurrences need field surveys. Occurrence from the Crocker Hills probably last remaining location in S.F. Bay. Known from ALA, MNT, MRN, SBA, SCR, SFO, SLO, and SMT counties.	April-September perennial herb	Although suitable vegetation associations are present, the preferred sandy substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 60448) is a non-specific record mapped around Oakland approximately 8 miles south of the study area. This occurrence is based on an 1863 Holder collection and is likely extirpated.	Not Expected

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<i>Hosackia gracilis</i> harlequin lotus	None None 4.2	Occurs in broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, North Coast coniferous forest, and valley and foothill grassland at elevations between 0 and 700 meters. Threatened by development, grazing, feral pigs, habitat alteration, and competition. Thought to be a larval food plant of the Federally Endangered lotis blue butterfly ( <i>Lycaeides argyrognomon</i> subsp. <i>lotis</i> ). Known from DNT, HUM, MEN, MNT, MRN, SCL, SCR, SFO, SLO, SMT, and SON counties.	March-July perennial herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest voucher specimen is a 1928 Mason collection (# 4308) from north of San Rafael.	Not Expected
<i>Hypogymnia schizidiata</i> island tube lichen	None None 1B.3	Occurs on bark and wood of hardwoods and conifers in chaparral and closed-cone coniferous forest at elevations between 360 and 405 meters. Often occurs on <i>Juniperus</i> spp., <i>Pinus</i> spp., <i>Quercus</i> spp., and <i>Simmondsia</i> spp. Known from MEN, MRN, SBA, and and SMT counties.	lichen	No suitable vegetation associations or substrates are present in the study area.	None
<i>Iris longipetala</i> coast iris	None None 4.2	Occurs in mesic coastal prairie, lower montane coniferous forest, and meadows and seeps at elevations between 0 and 600 meters. Many collections old and need field surveys. May hybridize with <i>I. missouriensis</i> . Threatened by development and trampling. Known from ALA, CCA, ELD, GLE, HUM, MEN, MER, MNT, MRN, SCL, SCR, SFO, SMT, SOL, SON, and VEN counties.	March-May (June) rhizomatous perennial	Suitable vegetation associations are present in the study area. The nearest voucher specimen is a 1996 Kimsey collection (# s.n.) from Wildcat Canyon.	Possible  Absent. Would have been detectable during 2022 protocol level rare plant surveys. Diagnostic vegetative material would be identifiable year-round.
<i>Isocoma arguta</i> Carquinez goldenbush	None None 1B.1	Occurs on alkaline soils, flats, and lower hills in valley and foothill grassland at elevations between 1 and 20 meters. Threatened by grazing and trampling at Jepson Prairie Preserve. Known from CCA and SOL counties.	August- December evergreen shrub	Although suitable vegetation associations are present, the preferred alkaline substrates are absent from the study area. The nearest CNNDDB occurrence (EONDx # 84836) is a non-specific record mapped on both sides of Carquinez Strait approximately 4.7 miles northeast of the study area.	Not Expected

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<i>Juglans californica</i> Southern California black walnut	None None 4.2	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland at elevations between 50 and 900 meters. Threatened by urbanization, grazing, non-native plants, and possibly by lack of natural reproduction. Possibly threatened by hybridization with horticultural varieties of walnut. Known from ALA, CCA, FRE, KRN, LAX, ORA, RIV, SBA, SBD, SBT, SDG, and VEN counties.	March-August deciduous tree	No suitable vegetation associations are present in the study area.	None
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	None None 1B.2	Occurs in freshwater and brackish marshes and swamps at elevations between 0 and 5 meters. Most populations small. Threatened by agriculture, water diversions, and erosion. Known from CCA, NAP, SAC, SJQ, SOL, SON, and YOL counties.	May-July (August- September) perennial herb	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Leptosiphon aureus</i> bristly leptosiphon	None None 4.2	Occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland at elevations between 55 and 1,500 meters. Historical occurrences need verification. May occur in CCA Co. Potentially threatened by road widening. Known from ALA, BUT, COL, HUM, KRN, LAK, MEN, MRN, NAP, PLA, SBT, SCL, SCR, SMT, SOL, SON, and YUB counties.	April-July annual herb	Suitable vegetation associations are present in the study area. The nearest voucher specimen is a 1900 Tracy collection (# 964) from the Berkeley Hills.	Possible  Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Leptosiphon grandiflorus</i> large-flowered leptosiphon	None None 4.2	Occurs on (sometimes) sandy substrates in cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 5 and 1,220 meters. Many historical occurrences extirpated by development. Known from ALA, CCA, HUM, KRN, LAK, MEN, MER, MNO, MNT, MRN, SBA, SBT, SCL, SCR, SDG, SFO, SLO, SMT, SON, and STA counties.	April-August annual herb	Although suitable vegetation associations are present, the preferred rocky microsites or sandy substrates are absent from the study area. The nearest voucher specimen is a 1998 Hillyard collection (# s.n.) from Tilden Park in Berkeley.	Not Expected
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	None None 4.3	Occurs in broadleafed upland forest and cismontane woodland at elevations between 170 and 1,500 meters. Known from COL, DNT, HUM, LAK, MEN, MNT, MRN, NAP, SBT, SFO, SHA, SMT, SON, TEH, TRI, and YOL counties.	April-June annual herb	No suitable vegetation associations are present in the study area.	None

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<i>Leptosiphon rosaceus</i> rose leptosiphon	None None 1B.1	Occurs in coastal bluff scrub at elevations between 0 and 100 meters. Possibly threatened by competition and non-native plants. Known from MRN, SFO, SMT, and SON counties.	April-July annual herb	No suitable vegetation associations are present in the study area.	None
<i>Lessingia hololeuca</i> woolly-headed lessingia	None None 3	Occurs on clay and serpentinite substrates in broadleaved upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations between 15 and 305 meters. Probably more widespread in the southern Sacramento Valley, southern North Coast Ranges, and northern S.F. Bay. Possibly threatened by grazing, and non-native plants. Known from ALA, FRE, MEN, MNT, MRN, NAP, SCL, SCR, SDG, SMT, SOL, SON, TEH, TUO, and YOL counties.	June-October annual herb	Suitable vegetation associations are present. The nearest voucher specimen is a 1961 Penalosa collection (# 2212) from the Tiburon Peninsula.	Possible Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Meconella oregana</i> Oregon meconella	None None 1B.1	Occurs in open, moist places in coastal prairie and coastal scrub at elevations between 250 and 620 meters. Known in CA only from five occurrences. Threatened by alteration of fire regimes. Known from CCA, MNT, SCL, and SLO counties.	March-April annual herb	Suitable vegetation associations are present in the study area. The nearest CNDDDB occurrence (EONDX # 52605) is a specific record from east of Vollmer Peak approximately 4.5 miles southeast of the study area.	Possible Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed	None None 3.2	Occurs in broadleaved upland forest, chaparral, cismontane woodland, and valley and foothill grassland at elevations between 45 and 825 meters. Many occurrences old; need current status information. Potentially threatened by vineyard development. Known from LAK, MNT, MRN, NAP, SCR, and SJQ counties.	March-May annual herb	Suitable vegetation associations are present in the study area. The nearest voucher specimen is a 1936 Stebbins collection (# 1547) from the east side of Wildcat Canyon.	Possible Not observed. Would have been detectable during 2022 protocol level rare plant surveys.
<i>Microseris paludosa</i> marsh microseris	None None 1B.2	Occurs in cismontane woodland, closed-cone coniferous forest, coastal scrub, and valley and foothill grassland at elevations between 5 and 355 meters. Similar to <i>M. laciniata</i> spp. <i>leptosepala</i> . Known from MEN, MNT, MRN, SCR, SFO, SLO, SMT, SOL, and SON counties.	April-June (July) perennial herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest CNNDDB occurrence (EONDX # 53623) is a non-specific record from the San Francisco Presidio approximately 12.5 miles southwest of the study area. This occurrence is based on historic collections and is presumed extirpated.	Not Expected



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<i>Monolopia gracilens</i> woodland woollythreads	None None 1B.2	Occurs on serpentine substrates in grassy sites and openings in broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland at elevations between 100 and 1,200 meters. Threatened by development, road maintenance, and road widening. Possibly threatened by logging. Known from ALA, CCA, MNT, SBT, SCL, SCR, SLO, and SMT counties.	(February) March-July annual herb	Although suitable vegetation associations are present, the preferred serpentine substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 80201) is a non-specific record from the Oakland Hills area approximately 9.2 miles southwest of the study area.	Not Expected
<i>Piperia michaelii</i> Michael's rein orchid	None None 4.2	Occurs in chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, and lower montane coniferous forest at elevations between 3 and 915 meters. Recent surveys in VEN Co. have been unsuccessful. Possibly threatened by road widening. Known from ALA, CCA, LAK, MER, MNT, MRN, SBT, SCR, SLO, SMT, TUO, and VEN counties.	April-August perennial herb	No suitable vegetation associations are present in the study area.	None
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	None None 1B.2	Occurs in mesic sites in chaparral, coastal prairie, and coastal scrub at elevations between 3 and 160 meters. Taxonomic work needed; intergrades with var. <i>hickmanii</i> , and differences may be environmentally induced. Known from ALA, MNT, SCL, SCR, SFO, and SMT counties.	March-June annual herb	Although suitable vegetation associations are present, preferred mesic sites are absent from the study area. The nearest CNNDDB occurrence (EONDX # 57052) is a non-specific record from the Oakland area approximately 7.5 miles south of the study area. This occurrence is based on a historic collection and is presumed extirpated.	Not Expected
<i>Plagiobothrys glaber</i> hairless popcornflower	None None 1A	Occurs in coastal salt marshes and alkaline marshes and swamps and meadows and seeps at elevations between 15 and 180 meters. Last confirmed sighting in 1954. Possibly relocated near Antioch; identification uncertain. All collections since 1930's located in the Hollister area. Possibly a variety of <i>P. stipitatus</i> . Known from ALA, MRN, SBT, and SCL counties.	March-May annual herb	Although suitable vegetation associations are present, the preferred hydrology is absent from the study area. The nearest CNNDDB occurrence (EONDX # 22580) is a non-specific record from Manzanita in Marin County approximately 11.8 miles west of the study area. Occurrence is based on a 1924 Zeile collection and is likely extirpated.	Not Expected

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<i>Polemonium carneum</i> Oregon polemonium	None None 2B.2	Occurs in coastal prairie, coastal scrub, and lower montane coniferous forest at elevations between 0 and 1,830 meters. Threatened by logging. Known from ALA, DNT, HUM, MRN, SFO, SIS, SMT, and SON counties.	April-September perennial herb	Although suitable vegetation associations are present, this species is not known to occur in the northern part of the East Bay. The nearest CNNDDB occurrence (EONDX # 73962) is a non-specific record from Angel Island approximately 8.5 miles southwest of the study area.	Not Expected
<i>Polygonum marinense</i> Marin knotweed	None None 3.1	Occurs in coastal salt and brackish marshes and swamps at elevations between 0 and 10 meters. Known from fewer than twenty occurrences. Taxonomic status uncertain, related to <i>P. aviculare</i> ; possibly synonym of <i>P. robertii</i> , a non-native plant. Immediate taxonomic study needed. Threatened by coastal development and foot traffic. Known from ALA, CCA, MRN, NAP, SFO, SOL, and SON counties.	(April) May- August (October) annual herb	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Ranunculus lobbii</i> Lobb's aquatic buttercup	None None 4.2	Occurs in standing water in cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pools at elevations between 15 and 470 meters. Threatened by urbanization, habitat alteration, agriculture, and development. Known from ALA, CCA, LAK, MEN, MNT, MRN, NAP, SAC, SCL, SCR, SMT, SOL, and SON counties.	February-May annual herb (aquatic)	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Senecio aphanactis</i> chaparral ragwort	None None 2B.2	Occurs in drying alkaline flats in chaparral, cismontane woodland, and coastal scrub at elevations between 15 and 800 meters. Threatened by development. Known from ALA, CCA, FRE, LAX, MER, MNT, ORA, RIV, SBA, SBD, SBT, SCL, SCR, SDG, SFO, SLO, SMT, SOL, TUL, and VEN counties.	January-April (May) annual herb	No suitable vegetation associations or substrates are present in the study area.	None
<i>Silene verecunda</i> subsp. <i>verecunda</i> San Francisco campion	None None 1B.2	Occurs often on mudstone or shale, sometimes on serpentine in chaparral, coastal bluff scrub, coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 30 and 645 meters. Threatened by development, recreational activities, and non-native plants. Known from SCR, SFO, and SMT counties.	(February) March-July (August) perennial herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest CNNDDB occurrence (EONDX # 70733) is a specific record from the Crissy Field approximately 12.5 miles north of the study area. This is a failed reintroduction site.	Not Expected

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<i>Spergularia macrotheca</i> var. <i>longistyla</i> long-styled sand-spurrey	None None 1B.2	Occurs in alkaline marshes and swamps and meadows and seeps at elevations between 0 and 255 meters. Threatened by development, habitat alteration, agriculture, and hydrological alterations. Possibly threatened by competition and non-native plants. Known from ALA, CCA, NAP, and SOL counties.	February-May perennial herb	Although suitable vegetation associations are present, the preferred alkaline substrates area absent from the study area. The nearest CNNDDB occurrence (EONDX # 109305) is a non-specific record from “the Richmond Salt Marsh” mapped in the vicinity of San Pablo Marsh and Wildcat Marsh approximately 3.8 miles northwest of the study area.	Not Expected
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	None None 1B.2	Occurs in open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes in broadleaved upland forest, chaparral, closed-cone coniferous forest, coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 10 and 500 meters. Threatened by grazing. Known from MNT, MRN, SCR, SFO, and SMT counties.	April-May annual herb	Although suitable vegetation associations are present, this species is not known to occur in the East Bay. The nearest CNNDDB occurrence (EONDX # 40838) is a non-specific record from Angel Island approximately 8.5 miles southwest of the study area.	Not Expected
<i>Streptanthus albidus</i> subsp. <i>peramoenus</i> most beautiful jewelflower	None None 1B.2	Occurs on serpentine outcrops, on ridges and slopes in chaparral, cismontane woodland, and valley and foothill grassland at elevations between 95 and 1,000 meters. Threatened by development, non-native plants, and grazing. Possibly threatened by dam maintenance, road construction and maintenance, and recreational activities. Known from ALA, CCA, MNT, SCL, and SLO counties.	(March) April- September (October) annual herb	Although suitable vegetation associations are present, the preferred serpentine substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 63268) is a non-specific record mapped around Claremont Canyon and Fish Ranch Road approximately 5.8 miles southeast of the study area.	Not Expected
<i>Stuckenia filiformis</i> subsp. <i>alpina</i> northern slender pondweed	None None 2B.2	Occurs in shallow, clear water of marshes and swamps at elevations between 300 and 2,150 meters. To be expected in the San Joaquin Valley, San Francisco Bay area, and the central high Sierra Nevada. Known from ALA, BUT, CCA, ELD, LAS, MER, MNO, MOD, MPA, PLA, SCL, SHA, SIE, SIS, SMT, SOL, and SON counties.	May-July perennial herb	No suitable vegetation associations or hydrology are present in the study area.	None

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<i>Symphotrichum lentum</i> Suisun Marsh aster	None None 1B.2	Occurs most often along sloughs with <i>Phragmites</i> spp., <i>Scirpus</i> spp., <i>Rubus</i> spp., and <i>Typha</i> spp, in marshes and swamps at elevations between 0 and 3 meters. Seriously threatened by marsh habitat alteration and loss, and erosion. Possibly threatened by herbicide application. Intergrades into <i>A. chilensis</i> . Known from CCA, NAP, SAC, SJQ, SOL, and YOL counties.	(April) May- November perennial herb (rhizomatous)	No suitable vegetation associations or hydrology are present in the study area.	None
<i>Trifolium hydrophilum</i> saline clover	None None 1B.2	Occurs in mesic, alkaline sites in marshes and swamps, valley and foothill grassland, vernal pools at elevations between 0 and 300 meters. Many sites likely extirpated; need current information on rarity and endangerment. Threatened by development, trampling, road construction, and vehicles. Known from ALA, CCA, LAK, MEN, MNT, NAP, SAC, SBT, SCL, SCR, SJQ, SLO, SMT, SOL, SON, and YOL counties.	April-June annual herb	Although suitable vegetation associations are present, the preferred alkaline substrates are absent from the study area. The nearest CNNDDB occurrence (EONDX # 62606) is a non-specific record from Stege approximately 1.2 miles southwest of the study area. This occurrence is based on a 1900 Tracy collection and is presumed extirpated.	Not Expected
<i>Triphysaria floribunda</i> San Francisco owl's-clover	None None 1B.2	Occurs on serpentine and non-serpentine substrate in coastal prairie, coastal scrub, and valley and foothill grassland at elevations between 10 and 160 meters. Threatened by grazing, non-native plants, and trampling. Known from MRN, SFO, and SMT counties.	April-June annual herb	Although suitable vegetation associations are present, this taxon is not known to occur in the East Bay. The nearest CNNDDB occurrence (EONDX # 42121) is a non-specific record mapped in the vicinity of the Potrero District in San Francisco approximately 12.7 miles southwest of the study area. This occurrence is based on historic collections and is presumed extirpated.	Not Expected
<i>Triquetrella californica</i> coastal triquetrella	None None 1B.2	Occurs within 30m from the coast on hillsides, rocky slopes, and fields in coastal bluff scrub, coastal scrub at elevations between 10 and 100 meters. Known in CA from fewer than ten small coastal occurrences, and in in OR from only one occurrence. Known from CCA, DNT, MEN, MRN, SDG, SFO, SMT, and SON counties.	NA moss	Although suitable vegetation associations are present, the study area is too far inland for this taxon to occur. The nearest CNNDDB occurrence (EONDX # 74493) is a non-specific record mapped at Ring Mountain approximately 10 miles west of the study area.	Not Expected



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<i>Viburnum ellipticum</i> oval-leaved viburnum	None None 2B.3	Occurs in chaparral, cismontane woodland, and lower montane coniferous forest at elevations between 215 and 1,400 meters. Threatened by habitat alteration. Known from ALA, CCA, ELD, FRE, GLE, HUM, LAK, MEN, MRN, NAP, PLA, SHA, SOL, SON, and TEH counties.	May-June deciduous shrub	No suitable vegetation associations are present in the study area.	None

**<sup>1</sup>Explanation of State and Federal Listing Codes**

Federal listing codes:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FPD Federally proposed for delisting
- FC Federal candidate species (former Category 1 candidates)
- SC Species of Concern – No longer maintained by USFWS

California listing codes:

- SE State listed as Endangered
- ST State listed as Threatened
- SR State listed as Rare
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened

California Rare Plant Rank codes:

- 1A Presumed extinct in California
- 1B Rare or endangered in California and elsewhere
- 2 Rare or endangered in California, more common elsewhere
- 3 Plants for which we need more information - Review list
- 4 Plants of limited distribution - Watch list

California Rare Plant Rank Threat Codes:

- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Moderately endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

*Notes: CRPR 1A and some CRPR 3 plant species lacking any threat information receive no threat code extension.*

EONDX is the CNDDDB Element Occurrence Index number which corresponds to unique records in the California Natural Diversity Database.

Abbreviations

- |                                      |                           |                        |
|--------------------------------------|---------------------------|------------------------|
| AMA Amador                           | MNT Monterey              | SFO San Francisco      |
| BUT Butte                            | MPA Mariposa              | SHA Shasta             |
| CAL Calaveras                        | MOD Modoc                 | SIE Sierra             |
| CCA Contra Costa                     | MRN Marin                 | SIS Siskiyou           |
| CNDDDB CA Natural Diversity Database | NAP Napa                  | SJQ San Joaquin        |
| CNPS CA Native Plant Society         | NEV Nevada                | SMI San Miguel Island  |
| COL Colusa                           | ORA Orange                | SMT San Mateo          |
| DNT Del Norte                        | PLA Placer                | SNI San Nicolas Island |
| ELD El Dorado                        | PLU Plumas                | SOL Solano             |
| FRE Fresno                           | RIV Riverside             | SON Sonoma             |
| GLE Glenn                            | SAC Sacramento            | SRO Santa Rosa Island  |
| HUM Humboldt                         | SBA Santa Barbara         | TEH Tehama             |
| KRN Kern                             | SBD San Bernardino        | TRI Trinity            |
| LAK Lake                             | SBT San Benito            | TUL Tulare             |
| LAS Lassen                           | SCL Santa Clara           | VEN Ventura            |
| LAX Los Angeles                      | SCR Santa Cruz            | YOL Yolo               |
| MAD Madera                           | SCT Santa Catalina Island | YUB Yuba               |
| MEN Mendocino                        | SCZ Santa Cruz Island     |                        |
| MER Merced                           | SDG San Diego             |                        |

## APPENDIX C SPECIAL STATUS FISH AND WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<b>FEDERAL/STATE LISTED, PROPOSED, CANDIDATE AND/OR FULLY PROTECTED SPECIES</b>				
<b><u>INVERTEBRATES:</u></b>				
<i>Bombus crotchii</i> Crotch bumble bee	Fed: None CA: SCE	The crotch bumble bee typically nests underground in abandoned rodent burrows or other cavities (Hatfield et al. 2015). Bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants.	May occur in grassland habitat throughout the study area. The nearest CNDDDB occurrence (EONDx #7892) is from 2015 and was recorded approximately 4.9 miles southwest near Berkeley.	Possible
<i>Bombus occidentalis</i> Western bumble bee	Fed: None CA: SCE	Occurs along the Pacific coast and western interior of North America, from Arizona, New Mexico and California, north through the Pacific Northwest and into Alaska. Eastward, the distribution stretches to the northwestern Great Plains and southern Saskatchewan. Nests occur primarily in underground cavities such as old squirrel or other animal nests and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among railroad ties (Jepson et al. 2014). Bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants.	May occur in grassland habitat throughout the study area. The nearest CNDDDB occurrence (EONDx #7892) is from 2015 and was recorded approximately 4.9 miles southwest near Berkeley.	Possible
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	Fed: FE, CH CA: None	Endemic to relatively large, turbid vernal pools and playas in the Central Valley from 16 to 5,577 feet in elevation (59 FR 48136). Disjunct populations reported from Vina Plains in Tehama and Butte counties; greater Jepson Prairie in Solano County; Sacramento NWR in Sacramento County; Tule Ranch portion of Yolo Basin Wildlife Area in Yolo County; Grasslands Ecological Area, Flying M Ranch, Ichord Ranch, and Virginia Smith Trust lands in Merced County, single location in Stanislaus County; and two locations in the Los Padres National Forest in Ventura County (59 FR 48136). Designated critical habitat encompasses 8 units totaling 161,786 acres in Butte, Colusa, Mariposa, Merced, Solano, Stanislaus, Tehama, and Ventura counties (71 FR 7118).	No suitable habitat present within the study area. Study area lacks large, turbid vernal pools or playa pools. The project is not located within critical habitat.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	Fed: FT, CH CA: None	Inhabits clear to tea-colored freshwater vernal pools in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands (59 FR 48136, Eriksen and Belk 1999). There are 32 known populations in the Central Valley from Shasta to Tulare counties, and along the Central and South Coast Ranges from Solano to San Benito counties (USFWS 1994). Often occur in low densities and rarely co-occur with other branchiopod species (Eng et al. 1990, Simovich et al. 1992). Designated critical habitat encompasses 35 units totaling 597,821 acres in Jackson County in Oregon, and Alameda, Amador, Butte, Contra Costa, Fresno, Kings, Madera, Mariposa, Merced, Monterey, Napa, Placer, Sacramento, San Benito, San Joaquin, Alameda, Amador, Butte, Contra Costa, Fresno, Kings, Madera, Mariposa, Merced, Monterey, Napa, Placer, Sacramento, San Benito, San Joaquin counties in California (71 FR 7118).	No suitable habitat is present within the study area. The study area lacks vernal pools or depression pools. The project is not located within critical habitat.	None
<i>Danaus plexippus</i> pop. 1 Monarch butterfly – California overwintering population	Fed: FC CA: None	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Host plant is the milkweed ( <i>Asclepias</i> spp.). Lifespan reaches > 9 months. Fall migration occurs from August-October. Overwintering roosts in California commonly occur on Eucalyptus trees.	There are no suitable wind-protected tree groves present within the study area. The nearest CNDDDB occurrence (EONDX #5271) of a monarch overwintering population was recorded in Richmond in 2001 approximately 3 miles northwest of the site.	Not Expected
<i>Elaphus viridis</i> Delta green ground beetle	Fed: FT CA: None	A small metallic green carabid beetle known to occur in Solano County in association with vernal pools.	No suitable habitat occurs within the study area. Site lacks suitable vernal pool habitat.	None
<i>Euphydras editha bayensis</i> Bay checkerspot butterfly	Fed: FT CA: None	A medium-sized butterfly with a 2-inch wingspan, a brown base color, and distinct red, yellow and white checkered pattern forming rows separated by black bands. Restricted to open grasslands with serpentine and similar soils supporting larval and adult host plants	The study area lacks serpentine soils and associated serpentine plants that function as host plants. The nearest CNDDDB record (EONDX # 17020) is located 10.6 miles southeast in Joaquin Miller Park in the 1970s.	None
<i>Haliois cracherodii</i> Black abalone	Fed: FE CA: SA	Range from Mendocino County south to Cabo San Lucas, Baja California, Mexico. Occur in rock crevices and holes in the intertidal zone.	No suitable intertidal habitat is present within the study area.	None
<i>Icaricia icarioides missionensis</i> Mission blue butterfly	Fed: FE CA: SA	A small butterfly measuring 1- ½ inches. Remaining populations are restricted to the Marin headlands in Marin County, and Milagra Ridge, San Bruno Mountain and Crystal Springs Watershed in San Mateo County.	The study site occurs outside the known range of the species. The nearest CNDDDB record (EONDX # 23001) is located 12.8 miles west in the Marin Headlands in 1981.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Speyeria callippe callippe</i> Callippe silverspot butterfly	Fed: FE CA: SA	A medium-sized butterfly with a wingspan of 2¼ inches. The Callippe silverspot is endemic to hilltops in native grasslands in the vicinity of its larval host plant, Johnny-jump-up ( <i>Viola pedunculata</i> ). Adult nectar plants include nonnative species such as Italian thistle ( <i>Carduus pycnocephala</i> ), pin-cushion plant ( <i>Scabiosa purpurea</i> ), and native species such as California buckeye ( <i>Aesculus californica</i> ). Callippe silverspots are relatively strong flyers that range as far as 0.75 miles between habitat patches (TRA 1982). The adult flight period occurs from May to July. It is restricted to seven locales within Sonoma (near Sears Point and Hiddenbrooke), San Mateo (San Bruno Mountain and Sign Hill) and Alameda (hills near Pleasanton) counties.	The study site occurs outside the known range of the species. The nearest CNDDDB record (EONDX # 103882) is located 13.7 miles northeast in 2012 east of Vallejo.	None
<i>Syncais pacifica</i> California freshwater shrimp	Fed: FE CA: SE	Inhabits low elevation (<380 feet) perennial and intermittent freshwater streams with structurally diverse pools and streambanks below 380 feet. Requires high water quality with minimal pollution and high oxygen content. The shrimp is endemic to Marin, Napa and Sonoma counties and is currently known from 17 coastal streams including Lagunitas, Walker, Stemple, Salmon, Austin, Green Valley, Laguna de la Santa Rosa, Huichica and Sonoma creeks and the Napa River (USFWS 1998b).	The study site occurs outside the known range of the species. The study site lacks suitable aquatic habitat.	None
<b><u>FISH:</u></b>				
<i>Acipenser medirostris</i> Green sturgeon (southern DPS)	Fed: FT, CH CA: SSC	The green sturgeon, southern DPS, is an anadromous fish that is found in marine waters from the Bering Sea to Ensenada, Mexico. The southern DPS includes all spawning populations south of the Eel River (exclusive), principally including the Sacramento River population (71 FR 17757). Locally, green sturgeon inhabit Suisun, San Pablo, and San Francisco bays, and coastal bays and estuaries from Monterey Bay north to Puget Sound. Spawning occurs in the Sacramento River between March and June; it may extend slightly longer, into July, in the Klamath River. Critical habitat includes coastal California waters from Monterey Bay, California, North to Cape Flattery, Washington; San Francisco Bay; Sacramento River and lower Feather River; Eastern reaches of the Sacramento-San Joaquin Delta; specified bays and estuaries in California, Oregon and Washington (74 FR 52300).	No suitable habitat present within the study area. Site lacks connectivity to suitable aquatic habitat.	None
<i>Eucyclogobius newberryi</i> Tidewater goby	Fed: FE CA: SSC	California endemic fish that inhabits brackish coastal lagoons, estuaries, and marshes. Their range extends from the Smith River in Del Norte County to Agua Hedionda Lagoon in San Diego County.	No suitable habitat present within the study area. Site lacks connectivity to suitable aquatic habitat. The nearest CNDDDB record (EONDX #13134) is located 5.8 miles southwest in Berkeley's Aquatic Park in 1950.	None



SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Hypomesus transpacificus</i> Delta smelt	Fed: FT, CH CA: ST AFS-T	Inhabits brackish water in the Sacramento-San Joaquin Delta. Delta smelt are found from Suisan Bay upstream and have been documented as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River and downstream as far as San Pablo Bay. Breed in freshwater habitat during winter and spring.	No suitable habitat occurs within the study area. Site lacks connectivity to suitable aquatic habitat.	None
<i>Oncorhynchus mykiss irideus</i> Steelhead, California Central Valley DPS	Fed: FT, CH CA: AFS-T	An anadromous fish that spend several years in the ocean; returning to freshwater rivers to spawn and rear. Listing includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman NFH, and Feather River Hatchery steelhead hatchery programs. Designated critical habitat encompasses 2,308 miles streams, 254 square miles estuary habitat in Tehama, Butte, Glenn, Shasta, Yolo, Sacramento, Solano, Yuba, Sutter, Placer, Calaveras, San Joaquin, Stanislaus, Tuolumne, Merced, Alameda, Contra Costa counties (70 FR 52488). The North Diablo Range watershed and South San Francisco Bay entire unit were excluded from the designation based on their potential economic impact (70 FR 52488). Primary constituent elements include: (1) freshwater spawning sites, (2) freshwater rearing sites, (3) freshwater migration corridors free of obstructions, (4) estuarine areas free of obstructions, and (5) nearshore marine areas free of obstructions (70 FR 52488).	No suitable habitat occurs within the study area. Site lacks connectivity to suitable aquatic habitat.	None
<i>Oncorhynchus tshawytscha</i> Salmon, Chinook [Sacramento River winter-run ESU	Fed: FE CA: SE	An anadromous fish that spends 1-3 years in the ocean and returns to perennial freshwater streams during the winter to spawn. ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries downstream to the Carquinez Strait.	No suitable habitat occurs within the study area. Site lacks connectivity to suitable aquatic habitat.	None
<i>Spirinchus thaleichthys</i> Longfin smelt	Fed: FC CA: ST, SSC	Found in open waters of estuaries, mostly in the middle or bottom of the water column. Prefers salinities of 15-30 parts per thousand (ppt.) but can be found in completely freshwater to almost pure seawater. An anadromous fish that inhabits coastal bays, estuaries and waters near the coastline from Prince William Sound in Alaska to the Sacramento-San Joaquin Delta. Spawning occurs in freshwater streams from December – February.	No suitable habitat occurs within the study area. Site lacks connectivity to suitable aquatic habitat.	None
<i>Thaleichthys pacificus</i> Eulachon	Fed: FE CA: SA	A small anadromous species that spawns in major river systems along the Pacific coast. This species uses nearshore and coastal marine, freshwater, and brackish aquatic habitat.	No suitable habitat occurs within the study area. Site lacks connectivity to suitable aquatic habitat. The nearest CNDDDB occurrence is a record from 2001 of an individual collected 7.7 miles west in San Francisco Bay (EONDX # 12422).	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<b>AMPHIBIANS:</b>				
<i>Ambystoma californiense</i> California tiger salamander Central California DPS	Fed: FT, CH CA: ST	A large terrestrial salamander that inhabits seasonal/semi-permanent water sources (3-4 months in duration) and adjacent upland habitat with small fossorial mammal activity in lowland grasslands, oak savannah and mixed woodlands. Range includes the Central Valley and Central Coast ranges from Colusa County south to San Luis Obispo and Kern counties from sea level to 3,460 feet (1,054 meters) in elevation with two disjunct populations within Sonoma County and Santa Barbara County. Species have been documented traveling distances up to 1 mile (Austin and Shaffer 1992). Designated critical habitat encompasses 199,109 acres in 20 counties and is grouped into 4 regions: Central Valley, Southern San Joaquin, East Bay and Central Coast (70 FR 49380). The East Bay Region includes Alameda County, south to Santa Benito and Santa Clara counties, and west to the eastern portions of San Joaquin and Merced counties (70 FR 49380). Primary constituent elements include: (1) standing bodies of fresh water that support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall; (2) upland habitats adjacent and accessible to breeding ponds that contain small mammal burrows or other underground habitat; and (3) accessible upland dispersal habitat between occupied locations that allow for movement between such sites (70 FR 49380).	Outside of species' known range, and the surrounding suburban matrix presents movement barriers to extant populations. The nearest CNDDDB occurrence is a record from 1886 of an extirpated population found on Alameda Island 12 miles south (EONDX # 45661).	None
<i>Rana draytonii</i> California red-legged frog	Fed: FT, CH CA: SSC	A medium-sized frog that inhabits lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation up to 4,921 feet (1,500 meters) in elevation (Jennings and Hayes 1994, Bulger et al. 2003, Stebbins 2003). Range extends from Redding to Baja California, Mexico with hybridization occurring with the California red-legged frog from the Oregon border to Marin County. Breeding occurs between November and April in standing or slow-moving water with emergent vegetation, such as cattails ( <i>Typha</i> spp.), tules ( <i>Scirpus</i> spp.) or overhanging willows ( <i>Salix</i> spp.) (Hayes and Jennings 1988). Larvae undergo metamorphosis 3 ½ to 7 months following hatching (Jennings and Hayes 1984, 1994). Designated critical habitat encompasses 1,636,609 acres in 20 counties and is grouped into 4 regions: Central Valley, Southern San Joaquin, East Bay and Central Coast (75 FR 12816). The East Bay Region includes Contra Costa County, Alameda County, south to Santa Benito and Santa Clara counties, and west to the eastern portions of San Joaquin and Merced counties (75 FR 12816). Primary constituent elements include: (1) aquatic breeding habitat; (2) non-breeding aquatic and riparian habitat; (3) Upland habitats associated with riparian and aquatic habitat; and (4) dispersal habitat that comprising accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within 1 mile of each other, and that support movement between such sites (75 FR 12816).	Suitable upland dispersal habitat is present on site. Potential breeding habitat exists in Wildcat Creek and in the form of at least one stock pond nearby the project site. The surrounding suburban matrix presents movement barriers. Six CNDDDB records exist within five miles. The nearest CNDDDB occurrence (EONDX #117342) was recorded approximately two miles east of the study area in 2008 near San Pablo Reservoir.	Possible

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Rana boylei</i> Foothill yellow-legged frog (West/Central Coast Clade)	Fed: None CA: SE	The foothill yellow-legged frog, designated by CDFW (2022c) as a California Species of Special Concern, ranges from the Cascade Mountains in Oregon south to the Transverse Ranges in Los Angeles County, and from the coast to western Sierra Nevada foothills between 600- and 5,000-foot elevation (Stebbins and McGinnis 2012, Moyle 1973). It inhabits small to moderately sized, perennial streams characterized by cobble-rocky substrate and shallow, flowing water in valley-foothill riparian, hardwood-conifer, mixed conifer, coastal scrub, mixed chaparral and wet meadow communities (Hayes and Jennings 1988, Jennings 1988).	The study site lacks small to moderately sized, perennial streams characterized by cobble-rocky substrate and shallow, flowing water for breeding habitat. Nearby Wildcat Creek provides potential aquatic refugia. The nearest CNDDDB occurrence (EONDX # 111912) was recorded four miles northeast near Pinole Creek in 1939.	None
<b>REPTILES:</b>				
<i>Chelonia mydas</i> Green sea turtle	Fed: FT CA: SA	Large, herbivorous sea turtle that is distributed worldwide. This species is typically found along coastal shelves and oceanic convergent zones and may migrate thousands of miles.	No suitable marine habitat is present within the study area.	None
<i>Dermochelys coriacea</i> Leatherback sea turtle	Fed: FE CA: SA	The largest of the sea turtles, the leatherback turtle is distributed worldwide from Nova Scotia to Puerto Rico and the U.S. Virgin Islands. Breeding occurs between February and July depending on latitude. This species is not a frequent nester in the U.S.	No suitable marine habitat is present within the study area.	None
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	Fed: FT, CH CA: ST	The Alameda whipsnake is a subspecies of the California whipsnake, <i>Masticophis lateralis</i> , which inhabits the foothills and mixed deciduous and pine forests of the Sierra Nevada and Coast Range mountains from Siskiyou County in northern California to the flatland desert in Cañon de Los Reyes in southern Baja California (Stebbins 2003). The Alameda whipsnake inhabits the inner Coast Ranges in western and central Contra Costa and Alameda counties (Jennings 1983, McGinnis 1992, Swaim 1994). Habitat fragmentation has restricted its range into five recognized subpopulations: Tilden-Briones population, Oakland-Las Trampas population, Hayward-Pleasanton Ridge population, Mount Diablo-Black Hills population, and Sunol-Cedar Mountain population. Designated critical habitat encompasses 154,834 acres in Alameda, Contra Costa and Santa Clara counties (71 FR 58176). Primary constituent elements include: (1) scrub/shrub communities with a mosaic of open and closed canopy; (2) woodland or annual grassland plant communities contiguous to lands containing PCE 1; and (3) lands containing rock outcrops, talus, and small mammal burrows within or adjacent to PCE 1 and or PCE 2 (71 FR 58176).	Suitable habitat is present in non-native grassland within the study area, and within scrub and oak woodland in the surrounding area. The surrounding suburban matrix presents movement barriers. The nearest CNDDDB occurrence (EONDX # 80335) was recorded 2.1 miles east near San Pablo Reservoir.  The study area is located within Critical habitat Unit 1 for Alameda whipsnake.	Possible

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Thamnophis gigas</i> Giant garter snake	Fed: FT CA: ST	The most aquatic of California garter snakes, this species prefers freshwater marsh and low-gradient streams and has adapted to drainage canals and irrigation ditches predominantly in the Central Valley from Butte County to Fresno County. Currently, 9 populations of giant garter snakes are recognized, which correspond to historic flood plains and tributary streams throughout the Central Valley: Butte Basin, Colusa Basin, Sutter Basin, American Basin, Yolo Basin, Cosumnes-Mokelumne Basin, Delta Basin, San Joaquin Basin, and Tulare Basin (USFWS 2017b).	The study area lies outside of the species' current and historic range.	None
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	Fed: FE CA:	The San Francisco garter snake is a highly aquatic subspecies of the common garter snake endemic to the San Francisco Bay Area, distributed along the western San Francisco Peninsula from the southern San Francisco County border south to Waddell Lagoon south of Año Nuevo and as far west as Crystal Springs Reservoir.	The study area lies outside of the species' current and historic range.	None
<b>BIRDS:</b>				
<i>Agelaius tricolor</i> Tricolored blackbird (nesting colony)	Fed: none CA: ST ABC, BCC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Nest in emergent vegetation within aquatic and riparian habitats. Breeds from mid-March through early August; double-brooded (Baicich and Harrison 2005, Shuford and Gardali 2008).	The study site lacks aquatic nesting habitat and the nearest CNDDDB occurrence is 13.2 miles northeast (EONDX #30790) that describes six males in 1987.	None
<i>Aquila chrysaetos</i> Golden eagle (nesting, wintering)	Fed: none CA: FP	A large diurnal raptor that nests on cliffs and in large trees in open areas. Forages in open terrain including grasslands, deserts, savannahs and early successional stages of forest and shrub habitats (Katzner et al. 2020). A year-round resident in the greater Bay Area. Breeding begins in February to late May; single-brooded (Baicich and Harrison 2005)	Although large trees are present adjacent to the study area, golden eagles are unlikely to nest on site due to the continuous human presence in Wildcat Canyon Regional Park and nearby residential areas. The nearest CNDDDB occurrence (EONDX #6239) was recorded 8.5 miles southeast in Sibley Volcanic Regional Park in 1993.	Not Expected
<i>Brachyramphus marmoratus</i> Marbled murrelet	Fed: FT CA: SE	A small coastal seabird that nests in coastal trees in mature/old-growth coniferous forests. Also nests on coastal cliffs or on the ground under vegetation. Breeding begins in April (Baicich & Harrison 2005).	The study site lacks mature or old-growth coniferous forest used by this species for nesting.	None



SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Charadrius alexandrinus nivosus</i> Western snowy plover (nesting)	Fed: FT, CH CA: SSC ABC, BCC	Inhabits beaches, mud flats, estuaries, salt evaporation ponds and inland river channels with banks for foraging. Breeds on sandy beaches, dunes, levees, riverbanks and dry salt evaporation beds along the California coastline typically in areas with minimal human disturbance. San Francisco Bay is within USFWS Recovery Unit 3 (USFWS 2007). Breeding begins in March; double-brooded (Baicich & Harrison 2005). Federal listing applies only to the Pacific coastal population that nests within 50 miles of the Pacific Ocean on the mainland coast, peninsulas, offshore islands, bays, estuaries, or rivers of the U.S. and Baja, CA; "Species of Special Concern" designation refers to both the coastal & interior populations (USFWS 2007, CNDDDB 2022). Critical habitat was revised on June 19, 2012 and encompasses 4 units and 6,077 acres in Washington, 9 units and 2,112 acres in Oregon, and 47 units and 16,337 acres in California. Counties in California with designated critical habitat include: Del Norte, Humboldt, Mendocino, Marin, Napa, Alameda, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties (77 FR 36728).	Study area lacks suitable habitat types and is outside of species' known range. Study area is not located within designated critical habitat.	None
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	Fed: FT CA: SE	The western yellow-billed cuckoo inhabits low elevation, well-developed riparian habitat typically consisting of cottonwoods ( <i>Populus</i> spp.) and willows ( <i>Salix</i> spp.) with a dense understory. Cottonwood trees often provide important foraging habitat where they feed largely in insects. Home range size within nesting habitat along the Sacramento River have been reported to occupy 25-99 acres per breeding pair. Breeding season begins in late May in the north and are typically single-brooded.	Study area and the riparian vegetation growing along Wildcat Creek lacks suitable habitat in the form of cottonwood trees.	None
<i>Elanus leucurus</i> White-tailed kite	Fed: None CA: FP	Inhabits grasslands, agriculture fields, oak woodlands, savannah, and riparian habitats in rural and urban areas. Feeds primarily on California voles. Year-round resident of Central and Coastal California. Breeding begins in February; sometimes double-brooded (Baicich and Harrison 2005).	May nest in trees within the study area, and forage in grasslands throughout. The nearest CNDDDB occurrence (EONDX #6245) was recorded five 4.6 miles southwest of the study area in 1990 at Brooks Island Regional Park, but the species is commonly reported in the area (eBird 2022).	Possible
<i>Falco peregrinus anatum</i> American peregrine falcon (nesting)	Fed: Delisted CA: Delisted FP BCC	Typically, a year-round resident in California and most common along the coast. Nests on cliffs, but frequently uses human-made structures such as bridges and buildings. Nests are generally located close to water bodies with abundant avian prey. Breeding begins in March; single-brooded (Baicich and Harrison 2005).	No suitable cliff nesting habitat is present within the study area. The nearest occurrence (EONDX #65959) approximately 9.6 miles northeast from 1991.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Haliaeetus leucocephalus</i> Bald eagle	Fed: Delisted CA: SE, FP	Bald eagles inhabit forested areas adjacent to large bodies of water including lakes, reservoirs, rivers, estuaries and the coastline. They are opportunistic and will feed on carrion, but actively prey on a variety of fish, mammals, and birds (Buehler 2022). Nests are built from sticks and branches in a large tree or a rocky outcrop; they have also been known to nest on the ground on islands (Baicich and Harrison 2005). In California, 87% of nest sites have been within 1 mile of water. Roosts sites are often located in large conifers near aquatic foraging areas.	The study area lacks sufficient foraging habitat to support nesting bald eagles. The nearest CNDDDB record was located 3 miles east at San Pablo Reservoir in 2006 (EONDX # 65047).	None
<i>Laterallus jamaicensis coturniculus</i> California black rail	Fed: None CA: ST, FP, ABC, BCC	Smallest of the rails; inhabits tidal marshes, freshwater wetlands and marshes. Wintering habitat similar to breeding habitat. A year-round resident of the San Francisco Bay Area. Breeding begins in March; sometimes double-brooded (Baicich and Harrison 2005).	No coastal or tidally influenced marshland habitat present within the study area. The nearest CNDDDB record (EONDX #26181) was recorded 3.5 miles southeast near Summit Reservoir Dam in Berkeley in 1922.	None
<i>Phoebastria albatrus</i> Short-tailed albatross	Fed: FT CA: SSC	Pelagic species from the Northern Pacific Ocean. Known to breed on a select few islands in the Pacific Ocean (Carboneras et al. 2020).	No suitable marine or pelagic habitat to support foraging or breeding.	None
<i>Rallus obsoletus</i> California Ridgway's rail	Fed: FE CA: SE, FP	Restricted to the San Francisco Bay Area. Inhabits coastal wetlands dominated by pickleweed ( <i>Salicornia</i> spp.) and cordgrass ( <i>Spartina</i> spp.). Wintering habitat similar to breeding habitat. Breeding begins in March; single-brooded (Baicich and Harrison 2005).	No coastal or shoreline wetlands present within study area. The nearest CNDDDB record (EONDX #30340) was recorded 3.0 miles southwest near El Cerrito in 2019.	None
<i>Riparia riparia</i> Bank swallow	Fed: None CA: ST	Nests in colonies in vertical banks with friable soils. Breeds from April to August. Most of California's nesting colonies occur along the upper Sacramento River. Breeding begins in April; double-brooded (Baicich & Harrison 2005).	No suitable nesting habitat within the study area. The nearest CNDDDB record (EONDX #25177) was recorded 17 miles southwest in Golden Gate Park in 1960.	None
<i>Sternula antillarum browni</i> California least tern (nesting colony)	Fed: FE CA: SE, FP, ABC	Breeds in colonies on bare soil, sand and mudflats along the California coast and the San Francisco Bay Area. Winters south to Mexico. Breeding begins in May; single-brooded (Baicich and Harrison 2005).	No suitable colonial breeding habitat present within study area. Occurrences are restricted to the shorelines of Suisun Bay and San Francisco Bay (CDFW 2020). The nearest CNDDDB record (EONDX #13784) was recorded 11 miles southwest in Alameda in 1996.	None
<i>Strix occidentalis caurina</i> Northern spotted owl	Fed: FT CA: SSC	One of three subspecies. Inhabits late seral stage conifer forests of the coastal ranges and western slopes of the Cascade Range. In California owls inhabit Douglas-fir mixed conifer and coastal redwood forests. Requires moderate to high canopy cover with sufficient large dead or dying trees/snags and abundant arboreal or semiarboreal prey base.	Study area lacks late seral conifer forest habitat.	None
<b><u>MAMMALS:</u></b>				

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Enhydra lutris nereis</i> Southern sea otter	Fed: FT CA: FP, SSC	Inhabits the California coastal water, bays and estuaries from Half Moon Bay south to Point Conception with the largest concentration occurring between Pismo Beach and Año Nuevo Island. Individuals rarely venture into open water exceeding 30 meters in depth. Breeding occurs throughout the year with no discernable peak.	No suitable marine habitat occurs within the study area. The nearest CNDDDB occurrence (EONDX # 32436 was recorded in 1997 approximately 11.65 miles southwest near Sausalito.	None
<i>Megaptera novaeangliae</i> Humpback whale	Fed: FE CA:	Inhabits the polar to tropical waters of the Pacific, Atlantic and Arctic oceans from the Bering Strait to Antarctica. Typically found in open, deep waters and rarely near coastal zones. Species migrates great distances.	No suitable marine habitat occurs within the study area.	None
<i>Reithrodontomys raviventris</i> Salt-marsh harvest mouse	Fed: FE CA: SE, FP	A small endemic, pickleweed ( <i>Salicornia</i> spp.) obligate species of tidal marshes of the San Francisco Bay Area. Requires adjacent upland tidal zones for escape cover during floods. Two recognized subspecies, <i>R. r. halicoetes</i> that inhabits San Pablo and Suisun bays and <i>R. r. raviventris</i> that inhabits the South San Francisco Bay including Corte Madera and Richmond marshes.	No tidal marshes present within the study area. The nearest CNDDDB occurrence (EONDX # 23859 was recorded in 2001 approximately 4.94 miles northwest near Richmond.	None
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	Fed: FE CA: ST	The smallest North American canid, the kit fox inhabits valley bottom and foothills from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west, and near La Grange, Stanislaus County on the east side of the Central Valley and some of the larger scattered islands of natural land on the Valley floor in Kern, Tulare, Kings, Fresno, Madera, and Merced Counties. Species occupies habitats with open or low vegetation with loose soils. In the northern portion of their range, they occupy grazed grasslands and to a lesser extent valley oak woodlands. Kit fox are also found in grazed grasslands including areas adjacent to tilled or fallow fields, and suburban settings (USFWS 1998a). Requires loose-textured sandy soils for burrowing, and a suitable prey base.	Suitable habitat is present in the non-native grassland and coast live oak woodland habitat within the study area. Study area is outside of the species' known range. The nearest CNDDDB occurrence (EONDX #68130 was recorded in 1975 approximately 13 miles northeast near San Ramon.	None
<b><u>SENSITIVE AND LOCALLY RARE SPECIES</u></b>				
<b><u>INVERTEBRATES:</u></b>				
<i>Bombus caliginosus</i> Obscure bumble bee	Fed: None CA: SA	Occurs along the Pacific Coast from southern California to southern British Columbia, with scattered records from the east side of California's Central Valley. Nests underground, but also above ground in abandoned bird nests. Bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants.	May occur in grassland habitat throughout the study area. The nearest CNDDDB occurrence (EONDX #97889) is from 1983 and was recorded approximately 2.1 miles southwest near Richmond.	Possible
<i>Cicindela hirticollis gravida</i> Sandy beach tiger beetle	Fed: None CA: SA	Found on sandy beaches of streams, rivers, lakes, and oceans.	Study area does not contain suitable habitat.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Gonidea angulata</i> Western ridged mussel	Fed: None CA: SA	The western ridged mussel is yellowish-brown to black in color and has an outer shell consisting of two valves reaching up to five inches in length. Once found in coastal basins in from San Diego County to British Columbia and as far east as Idaho, the mussel is now only found in California in rivers north of San Francisco Bay, with the Russian River being the southernmost observation point of the species. Like other freshwater mussels, the western ridged mussel requires abundant, connected aquatic habitats with stable substrates, perennial inundation, and protection from scour and disposition. Specifically, it inhabits rivers with wide floodplains, low slope, large components of sand and gravel substrate, and large boulders (Xerces Society 2020).	Study area does not contain suitable habitat.	None
<i>Helminthoglypta nickliniana bridgesi</i> Bridge's coast range shoulderband	Fed: None CA: SA	Occurs in rock piles and weedy grasslands on open hillsides in Alameda and Contra Costa counties.	Weedy grassland occurs throughout the study area. The nearest CNDDDB occurrence (EONDX # 23085) was recorded approximately 1.7 miles north	Possible
<i>Icaricia icarioides pheres</i> Pheres blue butterfly	Fed: None CA: SA	Likely extinct species.	Likely extinct species. The nearest CNDDDB occurrence (EONDX # 120968 ) was recorded approximately 15.3 miles southwest from San Francisco in the 1940s.	None
<i>Lichnanthe ursina</i> Bumblebee scarab beetle	Fed: None CA: SA	Uses coastal dune habitat.	Study area lacks coastal dune habitat used by this species. The nearest CNDDDB occurrence (EONDX # 22628 ) was recorded approximately 17 miles southwest from San Francisco in 1949.	None.
<i>Microcina leei</i> Lee's micro-blind harvestman	Fed: None CA: SA	One of seven members of the Bay Area endemic genus <i>Microcina</i> , the microblind harvestman. Like other member of its genus, it is known in only a few locations and is associated with serpentine grasslands.	No suitable serpentine grassland present within site. The nearest CNDDDB occurrence (EONDX # 58432) was recorded approximately 4.6 miles south near UC Berkeley in 1960.	None
<i>Microcina tiburona</i> Tiburon micro-blind harvestman	Fed: None CA: SA	One of seven members of the Bay Area endemic genus <i>Microcina</i> , the microblind harvestman. Like other member of its genus, it is known in only a few locations and is associated with serpentine grasslands.	No suitable serpentine grassland present within site. The nearest CNDDDB occurrence (EONDX # 22550) was recorded approximately 10.1 miles west near Tiburon in 1984.	None



SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Pomatiopsis californica</i> Pacific walker	Fed: None CA: SA	Semi-aquatic freshwater snail that utilizes wet leaf litter (Taylor 1981).	No suitable aquatic habitat occurs within the study area. The nearest CNDDDB occurrence (EONDX # 120913) was recorded approximately 9.6 miles south near Lake Merced in the 1800's.	None
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	Fed: None CA: SA	A solitary bee species known from only a few records, mostly west of San Francisco Bay.	The study area falls outside the known range for this species. The nearest CNDDDB occurrence (EONDX # 12935) was recorded approximately 16.8 miles south near Lake Merced in 1957.	None
<i>Tryonia imitator</i> Mimic tryonia	Fed: None CA: SA	An aquatic snail found in coastal lagoons and brackish estuarine stream mouth areas.	No suitable aquatic habitat occurs within the study area. The nearest CNDDDB occurrence (EONDX # 120913) was recorded approximately 9.7 miles south near Lake Merced.	None
<i>Vespericola marinensis</i> Marin hesperian	Fed: None CA: SA	An aquatic snail found in freshwater streams, coastal lagoons, and brackish estuarine stream mouth areas	No suitable aquatic habitat occurs within the study area. No suitable aquatic habitat occurs within the study area. The nearest CNDDDB occurrence (EONDX # 58731) was recorded approximately 12.2 miles west near Sausalito.	None
<b><u>FISH:</u></b>				
<i>Archoplites interruptus</i> Sacramento perch	Fed: None CA: SSC	Historically found in the sloughs, slow-moving waters, and lakes of the Central Valley; prefers warm water, aquatic vegetation is essential for young.	The study area lacks suitable aquatic habitat. The nearest CNDDDB record (EONDX # 616) is 2.4 miles southeast in a small weedy reservoir on Wildcat Creek in 1980.	None
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	Fed: None CA: SSC	Endemic to the lakes and rivers of the Central Valley, the Sacramento splittail is now confined to the Delta, Suisun Bay, lower Napa River, lower Petaluma River, the San Francisco Estuary and associated marshes (Moyle 2002). They inhabit slow-moving river sections, dead-end sloughs; requires flooded vegetation for spawning and foraging for young	The study area lacks suitable aquatic habitat. The nearest CNDDDB record (EONDX # 51711) is 12.5 miles north in a saltmarsh near Vallejo in 2003.	None
<b><u>AMPHIBIANS:</u></b>				

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Dicamptodon ensatus</i> California giant salamander	Fed: None CA: SSC	This species is a member of the Dicamptodontidae, otherwise known as the Giant Salamanders. The genus <i>Dicamptodon</i> includes species with large size and stocky bodies. <i>Members of this genus have aquatic larvae with filamentous external gills that metamorphose into terrestrial adults that breathe air with lungs.</i> Neotenic adults which retain their gills and continue to live in water are found in many populations. Gilled adults may outnumber transformed individuals in some populations. California giant salamander are endemic to California and are found in three isolated regions from Mendocino County near Point Arena east into the coast ranges into Lake and Glenn counties, south to Sonoma and Marin counties, continuing south of the San Francisco Bay from San Mateo County to southern Santa Cruz county. This species does not occur east of the San Francisco Bay.	The study site lacks wet coastal forests utilized by this species. The nearest CNDDDB occurrence (EONDX #98473) was recorded approximately 13 miles southwest across San Francisco Bay in the Marin Headlands in 1944.	None
<b>REPTILES:</b>				
<i>Emys marmorata</i> Western pond turtle	Fed: None CA: SSC	A moderate sized freshwater turtle that inhabits permanent or nearly permanent bodies of water and low gradient slow moving streams below 6,000 feet elevation. Range extends from Washington to the northern Bay Area counties along the Pacific slope drainages. Two recognized subspecies the northwestern pond turtle ( <i>E. m. marmorata</i> ) which ranges north of the American River and the southwestern pond turtle ( <i>E. m. pallida</i> ) which ranges from the coastal areas south of San Francisco. Subspecies interbreed within the gradation zone that defines the two subspecies.	Potential aquatic habitat occurs in the form of stock ponds and streams near the study area. Potential nesting habitat occurs within the study area. The surrounding suburban matrix provides substantial movement barriers. Two miles northwest rests the closest CNDDDB occurrence (EONDX # 615) upstream in Wildcat Creek.	Possible
<b>BIRDS:</b>				
<i>Accipiter cooperii</i> Cooper's hawk (nesting)	Fed: None CA: WL	Inhabits dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water & suburban areas. Hunts in broken woodlands & along forest edges. Breeding begins in April (Baicich & Harrison 2005).	Suitable nesting habitat is present in the trees within and adjacent to the study area. Cooper's hawks may also forage on site. The closest CNDDDB records is 5.3 miles west of the study area from 2014 near Richmond (EONDX #104469).	Possible
<i>Accipiter striatus</i> Sharp-shinned hawk (nesting)	Fed: None CA: WL	This species prefers north-facing slopes in dense stands of deciduous, conifer and mixed hardwood trees, including ponderosa pine, black oak, and Jeffrey pines, preferably in riparian areas; also known to nest in suburban areas.	Suitable nesting habitat is present adjacent to the study area. No CNDDDB occurrences of sharp-shinned hawk exist within the nearest nine quads of the study area.	Not Expected

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Ardea alba</i> Great egret (rookery)	Fed: None State: SA	Nests in tall trees, bushes or woody vegetation near open water such as lakes, freshwater marshes, coastal areas, or large streams. Nests colonially in rookeries (McCrimmon et al. 2020).	Potential nesting habitat exists adjacent to the study area, though the study area is not near a large body of water. Study area abuts Wildcat Creek and contains riparian habitat. The nearest CNDDDB record (EONDX # 25936) is 9.9 miles west from Marin Islands State Park in 1988.	Not Expected
<i>Ardea herodias</i> Great blue heron (rookery)	Fed: None State: SA	Nests in tall trees near open water such as lakes, freshwater marshes, coastal areas, or large streams. Nests colonially in rookeries ranging in size from a few pairs to several hundred (Vennesland and Butler 2020).	Potential nesting habitat exists adjacent to the study area, though the study area is not near a large body of water. Study area abuts Wildcat Creek and contains riparian habitat. The nearest CNDDDB record (EONDX # 5399) is 9.6 miles north from Vallejo Quarries in 1994.	Not Expected
<i>Asio flammeus</i> Short-eared owl	Fed: none CA: SSC	<p>The short-eared owl historically bred throughout California, west of the deserts (Grinnell and Miller 1944). This species has declined dramatically throughout the state. The species still breeds in the southern portion of the Sacramento Valley (Yolo and Solano Counties), the Sacramento-San Joaquin Delta, Suisun Marsh, northeastern portions of the state, in the Coast Ranges from Sonoma to Santa Barbara Counties, and in the Owens Valley (Small 1994, Zeiner et al. 1990).</p> <p>Nests are built on the ground in tall stands of grasses in lowland habitats near hunting grounds in marshes, meadows, and even agricultural fields (Grinnell and Miller 1944). The breeding season is from late March to July (Zeiner et al. 1990). The primary cause of decline in short-eared owl populations is the loss of breeding and foraging habitat. In some areas with suitable habitat intact, grazing and hunting have also led to further declines (Remsen 1978).</p>	The project site lacks lowland grassland and marsh habitat used by this species. The nearest CNDDDB occurrence (EONDX #25540) was recorded 5.3 miles west in 1986 near salt marsh habitat on property owned by the Richmond Chevron Refinery.	Not Expected

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Athene cunicularia</i> Burrowing owl (burrow sites & some wintering sites)	Fed: None CA: SSC, BCC	They are resident year-round throughout much of California, including the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley.  Throughout their range, burrowing owls require habitats with three basic attributes: (1) open, well-drained terrain; (2) short, sparse vegetation generally lacking trees; and (3) underground burrows or burrow-like structures (e.g., culverts) (Klute et al. 2003, Shuford and Gardali 2008). Valley bottoms and foothills with low vegetation and fossorial mammal activity. Burrowing owls are well adapted to open, relatively flat expanses. Grassland, shrub steppe, and desert are naturally occurring habitat types used by the species (CDFW 2012). Listing includes wintering observations with/without a burrow in San Francisco, Ventura, Sonoma, Marin, Napa and Santa Cruz counties. Breeding begins in March; single-brooded (Baicich and Harrison 2005).	The study site lacks the sparse vegetation and open, flat terrain used by burrowing owl. No suitable burrowing owl burrows were observed during the site visit. The nearest CNDDDB occurrence (EONDX #71559) was recorded 5.3 miles southwest of the project location in Richmond. A nesting pair was observed at that location in 2004.	Not Expected
<i>Branta hutchinsii leucopareia</i> (wintering) Cackling (Aleutian Canada) goose	Fed: None CA: WL	Small, stocky goose with short neck and deep, stubby bill. Plumage similar to Canada Goose. Formerly considered conspecific with its broadly distributed, larger-bodied, white-cheeked relative, the Canada Goose ( <i>Branta canadensis</i> ), the 4 small-bodied subspecies that comprise the Cackling Goose ( <i>B. hutchinsii</i> ) were formally acknowledged as a distinct species by the American Ornithologists' Union in 2004 (Mowbray et al. 2020). The subspecies exhibit a gradient in both body size and plumage color and each inhabits a distinct breeding region from the Aleutian Island chain in western Alaska to Nunavut. The Aleutian Island population winters mostly in California's Central Valley, with smaller numbers on the northern California coast (Mini et al. 2011)	The study area contains grasslands that represent potential wintering foraging habitat. The nearest CNDDDB occurrence (EONDX #67975) was recorded 3.6 miles east of the project location southeast of El Sobrante in 1987	Not Expected
<i>Circus hudsonius</i> Northern harrier (nesting)	Fed: None CA: SSC	Inhabits both freshwater and saltwater marshes and adjacent upland grasslands. Nests on the ground in tall grasses in grasslands and meadows. Breeding begins in March; single-brooded (Baicich and Harrison 2005).	There is suitable grassland for nesting present with the study area, but no nearby marsh habitat. May forage in grasslands within and adjacent to the study area. The nearest reported CNDDDB occurrence is from 1986 and located approximately 5.3 miles northwest in Richmond (EONDX #27020). Two nesting pairs was observed in this location in 1986.	Not Expected
<i>Coturnicops noveboracensis</i> Yellow rail	Fed: BCC CA: SSC	Highly secretive, breeds in northeastern California in wet meadows and sedge marshes. Winters in tidal marshes in the greater San Francisco Bay Area.	No tidal marsh habitat occurs in the study area.	None



SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Egretta thula</i> Snowy egret (rookery sites)	Fed: none CA: SA	Nests colonially, with nest sites situated in trees and protected beds of dense bulrush. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Potential nesting habitat exists adjacent to the study area, though the study area is not near a large body of water. Study area abuts Wildcat Creek and contains riparian habitat. The nearest CNDDDB occurrence is approximately 4.5 miles southwest at Brooks Island Regional Park (EONDX # 12101).	Not Expected
<i>Elanus leucurus</i> White-tailed kite	Fed: None CA: FP	In California, the white-tailed kite is a yearlong resident in coastal and valley lowlands, where it inhabits herbaceous and open stages of most habitat types (CDFW 2014). It is rarely found away from agricultural areas (CDFW 2014). Nest sites are usually located immediately adjacent to preferred foraging areas and are often in a single, isolated tree (Glover 2009) or near riparian corridors (Niemela 2007).	Suitable foraging habitat occurs within the study area and suitable nesting habitat exists in adjacent oak woodlands. The nearest CNDDDB occurrence (EONDX # 6245) is approximately 4.3 miles southwest on Brooks Island recorded from 1990.	Possible
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	Fed: None CA: SSC, BCC	Year-round resident of the San Francisco Bay Area. Inhabits dense vegetation in wetlands, marshes, estuaries, prairies and riparian areas of San Francisco and San Pablo bays, and along the coastal areas of Marin, San Francisco, and San Mateo counties (Shuford and Gardali 2008). Breeds from mid-March to late July; double-brooded (Baicich and Harrison 2005, Shuford and Gardali 2008).	No suitable wetland nesting habitat exists within the study area. The nearest CNDDDB record was located 8 miles south near Emeryville in 1989 (EONDX # 59848)	None
<i>Hydroprogne caspia</i> Caspian tern	Fed: None CA: SA	The largest tern, the Caspian Tern is distinguished by its massive coral red bill, hoarse vocalizations, and similarities to large <i>Larus</i> gulls in flight. Breeds in wide variety of habitats, ranging from coastal estuarine, salt marsh, and barrier islands along Pacific, Atlantic and Gulf Coasts, to James Bay beaches and freshwater islands in Great Lakes and other inland sites. (Cuthbert and Wires 2020).	No suitable breeding habitat occurs within the study site or nearby. The nearest CNDDDB occurrence is approximately 4.6 miles southwest at Brooks Island Regional Park in 1990 (EONDX # 6635).	None
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	Fed: None CA:SSC, BCC	One of four subspecies in the San Francisco Bay Area. It is a year-round resident of tidal salt and brackish marshes of Suisun Bay, Carquinez Strait and the Sacramento-San Joaquin Delta west of Kimball Island (Shuford and Gardali 2008). Breeding begins in April; often triple-brooded (Baicich & Harrison 2005).	No suitable tidal marshland habitat is present within the study area. The project is outside of the species' known range. The nearest CNDDDB occurrence (EONDX #60850) was recorded 8.6 miles to the northeast in 1901 near Crockett.	None
<i>Melospiza melodia pusillula</i> Alameda song sparrow	Fed: None CA:SSC, BCC	One of four subspecies in the San Francisco Bay Area. Endemic to the southern San Francisco Bay tidal marshlands. Breeding begins in April; often triple-brooded (Baicich & Harrison 2005).	No suitable tidal marshland habitat is present within the study area. The project is outside of the species' known range. The nearest CNDDDB occurrence (EONDX #61077) was recorded 1.9 miles to the northwest in 1941 near Richmond.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Nannopterum auritum</i> Double-crested cormorant	Fed: None CA: WL	Large, dark cormorant; typical length 70–90 cm, body mass 1.2–2.5 kg; sexes alike. Males slightly larger than females, but regional (subspecific) differences are much greater (see Measurements, below). Adults have black or dark-brown plumage, with a dull greenish or bronze gloss that may be absent from worn feathers. The orange-yellow skin of the face and throat (gular region) is distinctive throughout the year. Common inhabitants of seacoasts and inland waters, rarely observed out of sight of land. Occurs on ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines (Dorr et al. 2021).	The study area lacks sufficient nearby aquatic habitat to support breeding or foraging. The nearest CNDDDB occurrence (EONDX #27369) was recorded 7 miles to the west in 1993 near Richmond.	None
<i>Nycticorax nycticorax</i> (rookery sites) Black-crowned night heron	Fed: None CA: SA	Medium-sized heron with a stocky in build and relatively short neck and legs. Adults possess a distinctive black cap, black upper back, and black scapulars. breeding habitat includes vegetation and near fresh, brackish, and salt-water foraging opportunities.	Potential nesting habitat exists adjacent to the study area, though the study area is not near a large body of water. Study area abuts Wildcat Creek and contains riparian habitat. The nearest CNDDDB occurrence (EONDX # 12100) was recorded 4.5 miles to the west in 1990 on Brooks Island Regional Preserve.	Not Expected
<i>Pandion haliaetus</i> Osprey	Fed: None CA: WL	The osprey (nesting) is included on the CDFW Watchlist (2022c). Almost exclusively piscivorous, the osprey inhabits areas near lakes, rivers, estuaries, marshes, lagoons, mangroves and coasts (Poole et al. 2002, Baicich & Harrison 2005). Breeds throughout much of northern North America and south into Marin, Tehama and Plumas counties in California. Winters in California along the coast from southern Oregon to southern California, and inland to the Cascades and western deserts in southern California (Bierregaard et al. 2020). Builds large, conspicuous stick nests in the tops of trees or rocky outcrop near prominent waterbodies; uncommonly on the ground or in bushes (Baicich & Harrison 2005). Breeding occurs from late march to early June and may be double- or triple-brooded (Baicich & Harrison 2005).	The study area lacks sufficient nearby aquatic habitat to support breeding or foraging. The nearest CNDDDB occurrence (EONDX #108158) was recorded 6.4 miles to the northwest in 2016 near San Pablo Bay.	None
<i>Setophaga petechia</i> Yellow warbler (nesting)	Fed: none CA: SSC, BCC	Nests in dense, shrubby thickets dominated by willows along water courses and wet meadows. They build nests in a variety of riparian trees, most commonly willows ( <i>Salix</i> spp.) and cottonwoods ( <i>Populus</i> spp.).	Suitable nesting habitat is present adjacent to the study area. No CNDDDB occurrences of sharp-shinned hawk exist within the nearest nine quads of the study area.	Not Expected
<i>Xanthocephalus xanthocephalus</i> Yellow-headed blackbird	Fed: None CA: SSC	Inhabits lakes, reservoirs, sloughs, marshes, and ponds with tall emergent vegetation typically cattails ( <i>Typha</i> spp.) or tules ( <i>Scirpus</i> spp.) (Shuford and Gardali 2008). Nests built in vegetation over water in nesting colonies. Yellow-headed blackbirds feed on grains during the non-breeding season and almost exclusively on insects during the breeding season (Twedt and Crawford 2020).	No suitable nesting habitat occurs within the study area. The nearest CNDDDB occurrence (EONDX # 63650) was recorded approximately 4.4 miles northwest of the study area in 1914 near Pinole.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<b>MAMMALS:</b>				
<i>Antrozous pallidus</i> Pallid bat	Fed: None CA: SSC, WBWG-H	Inhabits rocky terrain in open areas in lowlands, foothills and mountainous areas near water throughout California below 2,000 meters. Roost in caves, rock crevices, mines, hollow trees, buildings and bridges in arid regions in low numbers (<200). Active from March-November; migrates in some areas but may hibernate locally.	The study area lacks any trees, caves, structures, or cliff faces and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest reported occurrence (EONDX #66594) dates back to 1943 and was mapped 2.2 miles south near El Cerrito.	None
<i>Corynorhinus townsendi</i> Townsend's big-eared bat	Fed: None CA: SSC, WBWG-H	An obligate cave rooster and moth specialist. Inhabits caves and mines, but may also use bridges, buildings, rock crevices and tree hollows in coastal lowlands, cultivated valleys and nearby hills characterized by mixed vegetation throughout California below 3,300 meters. Exhibits high site fidelity and is highly sensitive to disturbance. Forages along edge habitats near water; may travel long distances during foraging bouts.	The study area lacks any structures, caves, or cliff faces and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest reported occurrence (EONDX #93555) is located 5.5 miles southeast of the study area near Berkeley dating back to 1938.	None
<i>Dipodomys heermanni berkeleyensis</i> Berkeley kangaroo rat	Fed: None CA: SA	Possibly extinct. Inhabits open grass hilltops and open spaces in chaparral and blue oak/foothill pine woodlands; needs fine, deep, well-drained soils for burrowing. Past collections of the species have been made in the vicinity of Mount Diablo, the Berkeley Hills, Strawberry Canyon, Orinda Park Pool, Calaveras Reservoir, and Siesta Valley. More recent – and as-yet unconfirmed – kangaroo rat occurrences have been reported in the Sunol Valley Regional Wilderness well within the species recognized range. Populations in the vicinity of the Berkeley Hills are considered extirpated due to predation by domestic cats.	Suitable habitat is present within the study area, though the species is thought to be extirpated from the area. The nearest CNDDDB occurrence (EONDX #24076) was recorded in 1938 approximately 5.3 miles southeast of the study area east of Berkeley.	None
<i>Erethizon dorsatum</i> North American porcupine	Fed: None CA: SA	A large quill-covered rodent in the New World porcupine family. It is the second largest rodent in North America, after the North American beaver ( <i>Castor canadensis</i> ). range from Alaska to northern mountains in Mexico. They are commonly found in coniferous and mixed forested areas but have adapted to harsh environments such as shrublands and tundra. They make their dens in hollow trees or in rocky areas (Emmons 2016).	The study area lacks suitable forested habitat. The nearest reported occurrence (EONDX # 10798) is a location 15.7 miles southwest of the study area in Golden Gate Park from 1920.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Eumetopias jubatus</i> Steller sea lion	Fed: None CA: SA	Endemic to the north Pacific Ocean. Occurs along the Pacific coastline south to San Miguel Island. A large, carnivorous sea-lion. Forages for fish in deep waters off shorelines	The study area lacks suitable marine habitat. The nearest reported occurrence (EONDX # 10798) is a location 16.5 miles southwest of the study area near San Francisco from 1982.	None
<i>Lasionycteris noctivagans</i> Silver-haired bat	Fed: None CA: SA	Inhabits conifer and mixed conifer forests, especially old growth throughout the mountainous coastal and Sierra Nevada regions of northern California. Roosts in cavities, hollows and exfoliating bark of large diameter snags near the tops of trees (Perkins 2005). Forages in open areas such as meadows, above the canopy and within riparian zones for a variety of ground and airborne insects and arthropods (Perkins 2005). Summer range is generally below 9,000 feet (Kunz 1982). Females may form nursery colonies or occur as solitary individuals in dense foliage or hollow trees. Most activity is crepuscular, emerging earlier than most bat species.	The study area lacks any trees and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest reported occurrence (EONDX # 68905) is a location 2.4 miles south of the study area near Piedmont from 1982.	None
<i>Lasiurus blossevillii</i> Western red bat	Fed: None CA: SSC, SA, WBWG-H	Primarily a riparian obligate species with a widespread distribution extending from British Columbia to Argentina (WBWG 2017). They are ubiquitous throughout most of California except the northern Great Basin region. Roosting typically occurs individually in dense clumps of tree foliage in riparian areas, especially willows, cottonwoods, and sycamores, and within orchards and suburban areas in trees and shrubs.	The study area lacks any trees and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest reported occurrence (EONDX # 69792) is a location 15.4 miles southwest of the study area in Golden Gate Park from 2000.	None
<i>Lasiurus cinereus</i> Hoary bat	Fed: None CA: SA, WBWG-M	Ubiquitous throughout California. A solitary foliage rooster that prefers evergreens, but will use deciduous trees in forested habitats, particularly in edge habitat (WBWG 2021). May forage in small to large groups. Feeds primarily on moths but will eat a variety of other insects. Migrates great distances.	The study area lacks any trees and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest reported occurrence (EONDX # 117601) is a location 2.1 miles southwest of the study area in El Cerrito from 1969.	None
<i>Microtus californicus sanpabloensis</i> San Pablo vole	Fed: None CA: SA, SSC	Restricted to salt marsh habitats along the south shore of San Pablo Bay in Contra Costa County.	No suitable salt marsh habitat present. The nearest reported occurrence (EONDX # 14532) is a location 4.6 miles west of the study area in Richmond from 1986.	None

SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	Fed: None CA: SSC	Inhabits chaparral, coastal scrub, oak woodland, and riparian woodland in the San Francisco Bay Area. They exhibit high site fidelity and may live in the same nest community for generations. Nest structures are key indicator of their presence and are easily identified by their large, conical appearance.	No suitable habitat within the study area. May be present in oak woodlands and riparian areas adjacent to the site. The nearest CNDDDB occurrence was recorded in 2017 (EONDX # 113886), approximately 3.5 miles northeast of the study area near El Sobrante.	Not Expected
<i>Nyctinomops macrotis</i> Big free-tailed bat	Fed: None CA: SA, SSC, WBWG-M	Ranges from sea level to 2,600 meters (8,500 feet) in southern Utah, Nevada, and California, southern and western Texas, north and central Colorado, Arizona and New Mexico southward to South America. Inhabits rugged and rocky arid landscapes in desert scrub, woodland, and evergreen habitats. Roosts primarily in cliff crevices, but will also use buildings, caves, and tree cavities (WBWG 2021).	The study area lacks any trees, structures, or cliff faces and therefore contains no roosting habitat. The species may still forage or migrate through the area, but has no potential to roost on site. The nearest CNDDDB occurrence was recorded in 1916 (EONDX # 59604), approximately 4.9 miles south near Berkeley.	None
<i>Scapanus latimanus insularis</i> Angel Island mole	Fed: None CA: SA	Known from Angel Island, California. Occurs in moist, rich soils with scant vegetation including n roadways, pure sand, recently cultivated ground, and grasslands with little vegetation. rarely occur in heavy clay, gravelly, or stony soils.	The study site is outside the known range of this subspecies. The nearest CNDDDB occurrence was recorded in 1936 (EONDX # 41250), approximately 9.3 miles southwest on Angel Island.	None
<i>Scapanus latimanus parvus</i> Alameda Island mole	Fed: None CA: SA, SSC	Known from Alameda Island, California. Occurs in moist, fairly rich soils with scant vegetation including n roadways, pure sand, recently cultivated ground, and grasslands with little vegetation. rarely occur in heavy clay, gravelly, or stony soils.	The study site is outside the known range of this subspecies. The nearest CNDDDB occurrence was recorded in 1938 (EONDX # 60853), approximately 10.9 miles south on Alameda Island.	None
<i>Sorex ornatus sinuosus</i> Suisun shrew	Fed: None CA: SA, SSC	Associated with the middle salt marsh zone, near the mean high-water elevation around the bay.	The study site is outside the known range of this subspecies. The study area lacks salt marsh habitat used by this species. The nearest CNDDDB occurrence was recorded in 1983 (EONDX # 24373), approximately 10.9 miles north near Vallejo.	None
<i>Sorex vagrans halicoetes</i> Salt-marsh wandering shrew	Fed: None CA: SSC	Species is restricted to salt marshes in San Francisco Bay. Feeds mainly on invertebrates and some plant material within a low, dense cover of pickleweed ( <i>Salicornia</i> spp.). Most young are born March to May. Maximum lifespan is about 16 months.	No suitable tidal marshland habitat is present within the study areas. The project is outside of the species' known range. The nearest CNDDDB occurrence (EONDX # 24357) was recorded approximately 5 miles northwest of the study area in 2005 near Pinole.	None



SPECIES NAME COMMON NAME	LISTING STATUS <sup>1</sup>	HABITAT REQUIREMENTS & ADDITIONAL NOTES	HABITAT SUITABILITY & LOCAL DISTRIBUTION	POTENTIAL FOR OCCURRENCE
<i>Taxidea taxus</i> American badger	Fed: None CA: SSC	A large mustelid that inhabits open areas with friable soils within woodland, grassland, savannah and desert habitats. A fossorial mammal that preys predominately on ground squirrels ( <i>Ammospermophilus</i> and <i>Spermophilus</i> spp.) and pocket gophers ( <i>Thomomys</i> spp.). Mating occurs in late summer; young are born in March and April (Jameson and Peeters 2004).	There is suitable habitat in the grassland found within the study area. The surrounding suburban matrix presents dispersal barriers. The nearest reported occurrence was recorded in 1925 approximately 7.3 miles southeast of the study area near Orinda (EONDX #56812).	None
<i>Zapus trinotatus orarius</i> Point Reyes jumping mouse	Fed: None CA: SA, SSC	This is a small (211-238 mm TL), long-tailed (112-155 mm), dark yellow-brown mouse with an indistinctly bicolored dorsum, white ventrum, faintly tinged with yellow, sparsely haired bicolored tail, enlarged hind legs and feet (30-36 mm) adapted for jumping. The Pacific jumping mouse occurs along the narrow, fog zone in coastal forests west of the Cascades, from southwestern British Columbia south along the coasts of Oregon and Washington to Marin County, California (Krutzsch 1954, Hall 1981). The Point Reyes jumping mouse is restricted to the Point Reyes Peninsula in southern and western Marin County (Krutzsch 1954). (Collins, P.W. in Terrestrial Mammal Species of Special Concern in California, Bolster, B.C., Ed., 1998)	The study area occurs outside the known range of this species. The nearest reported occurrence was recorded in 1969 approximately 13.7 miles southwest of the study area near the Marin Headlands (EONDX # 59431).	None

<sup>1</sup> Explanation of State and Federal Listing Codes

Federal listing codes:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FPD Federally proposed for delisting
- FC Federal candidate species (former Category 1 candidates)
- SC Species of Concern (NOAA Fisheries regulated species only)
- CH Critical Habitat (Proposed or Final) is designated
- SSC Species of Special Concern designated by the Marine Mammal Commission

California listing codes:

- SE State listed as Endangered
- ST State listed as Threatened
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened
- SCD State candidate for delisting
- SSC California Species of Special Concern
- FP Fully Protected
- WL Watch List

- ABC The American Bird Conservancy maintains a Green List of all the highest priority birds for conservation in the continental United States and Canada. Based off the species assessments prepared by Partners in Flight (PIF) and has been expanded to include shorebirds, waterbirds and waterfowl.
- AFS American Fisheries Society identifies marine, estuarine and diadromous fish species that are at risk of extinction in North America. The AFS has designated the following four classifications in order of conservation importance E – Endangered, T – Threatened, V – Vulnerable, and CD – Conservation Dependent.
- BCC U.S. Fish and Wildlife Service Birds of Conservation Concern. List of migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent the Service’s highest conservation priorities.
- SA “Special Animals” is a general term that refers to all of the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of “species at risk” or “special status species”. The Department of Fish and Game considers the taxa on this list to be those of greatest conservation need.
- WBWG Western Bat Working Group: H – High Priority indicates species that are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats; M – Medium Priority indicates a lack of information to assess the species’ status; L – Low Priority indicates relatively stable populations based on available data. The WBWG also uses intermediary designations including MH – Medium-High and LM – Low-Medium priorities.

Xerces Xerces Society for Invertebrate Conservation. Red List identifies endangered, threatened or at-risk pollinator species. PE – Possibly Extinct indicates species only known from historical occurrences; CI – Critically Imperiled indicates species at very high risk of extinction; I – Imperiled indicates species at high risk of extinction; V – Vulnerable indicates species at moderate risk of extinction; DD – Data Deficient indicates lack of information to sufficiently assess status.

# APPENDIX D CALIFORNIA NATURAL DIVERSITY DATABASE SPECIES LIST

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# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



**Query Criteria:** Quad IS (San Francisco North (3712274) OR Oakland West (3712273) OR Oakland East (3712272) OR San Quentin (3712284) OR Richmond (3712283) OR Briones Valley (3712282) OR Petaluma Point (3812214) OR Mare Island (3812213) OR Benicia (3812212)  
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Acipenser medirostris pop. 1</i> green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	
<i>Adela oplerella</i> Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
<i>Ambystoma californiense pop. 1</i> California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
<i>Amorpha californica var. napensis</i> Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G4	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Archoplites interruptus</i> Sacramento perch	AFCQB07010	None	None	G1	S1	SSC
<i>Arctostaphylos franciscana</i> Franciscan manzanita	PDERI040J3	Endangered	None	GHC	S1	1B.1
<i>Arctostaphylos montana ssp. ravenii</i> Presidio manzanita	PDERI040J2	Endangered	Endangered	G3T1	S1	1B.1
<i>Arctostaphylos pallida</i> pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Arenaria paludicola</i> marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
<i>Asio flammeus</i> short-eared owl	ABNSB13040	None	None	G5	S3	SSC



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Blepharizonia plumosa</i> big tarplant	PDAST1C011	None	None	G1G2	S1S2	1B.1
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	WL
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
<i>Calochortus tiburonensis</i> Tiburon mariposa-lily	PMLIL0D1C0	Threatened	Threatened	G1	S1	1B.1
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
<i>Carex comosa</i> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<i>Carex praticola</i> northern meadow sedge	PMCYP03B20	None	None	G5	S2	2B.2
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1T2	S1S2	1B.2
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
<i>Chloropyron molle</i> ssp. <i>molle</i> soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
<i>Cicindela hirticollis gravida</i> sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
<i>Circus hudsonius</i> northern harrier	ABNKC11011	None	None	G5	S3	SSC





Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Cirsium andrewsii</i></b> Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
<b><i>Cirsium hydrophilum var. vaseyi</i></b> Mt. Tamalpais thistle	PDAST2E1G2	None	None	G2T1	S1	1B.2
<b><i>Clarkia concinna ssp. automixa</i></b> Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
<b><i>Clarkia franciscana</i></b> Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1
<b><i>Collinsia corymbosa</i></b> round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
<b><i>Collinsia multicolor</i></b> San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<b><i>Coturnicops noveboracensis</i></b> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<b><i>Danaus plexippus plexippus pop. 1</i></b> monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2	S2	
<b><i>Dicamptodon ensatus</i></b> California giant salamander	AAAAH01020	None	None	G2G3	S2S3	SSC
<b><i>Dipodomys heermanni berkeleyensis</i></b> Berkeley kangaroo rat	AMAFD03061	None	None	G4T1	S2	
<b><i>Dirca occidentalis</i></b> western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
<b><i>Egretta thula</i></b> snowy egret	ABNGA06030	None	None	G5	S4	
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Enhydra lutris nereis</i></b> southern sea otter	AMAJF09012	Threatened	None	G4T2	S3	FP
<b><i>Erethizon dorsatum</i></b> North American porcupine	AMAFJ01010	None	None	G5	S3	
<b><i>Eriogonum luteolum var. caninum</i></b> Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
<b><i>Eryngium jepsonii</i></b> Jepson's coyote-thistle	PDAP10Z130	None	None	G2	S2	1B.2
<b><i>Eucyclogobius newberryi</i></b> tidewater goby	AFCQN04010	Endangered	None	G3	S3	
<b><i>Eumetopias jubatus</i></b> Steller sea lion	AMAJC03010	Delisted	None	G3	S2	



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Euphydryas editha bayensis</i></b> Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
<b><i>Extriplex joaquinana</i></b> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<b><i>Falco peregrinus anatum</i></b> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<b><i>Fissidens pauperculus</i></b> minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
<b><i>Fritillaria liliacea</i></b> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<b><i>Geothlypis trichas sinuosa</i></b> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<b><i>Gilia capitata ssp. chamissonis</i></b> blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
<b><i>Gilia millefoliata</i></b> dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
<b><i>Gonidea angulata</i></b> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<b><i>Grindelia hirsutula var. maritima</i></b> San Francisco gumplant	PDAST470D3	None	None	G5T1Q	S1	3.2
<b><i>Haliaeetus leucocephalus</i></b> bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
<b><i>Helianthella castanea</i></b> Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
<b><i>Helminthoglypta nickliniana bridgesi</i></b> Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
<b><i>Hemizonia congesta ssp. congesta</i></b> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<b><i>Hesperolinon congestum</i></b> Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
<b><i>Heteranthera dubia</i></b> water star-grass	PMPON03010	None	None	G5	S2	2B.2
<b><i>Hoita strobilina</i></b> Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
<b><i>Holocarpha macradenia</i></b> Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
<b><i>Horkelia cuneata var. sericea</i></b> Kellogg's horkelia	PDR0S0W043	None	None	G4T1?	S1?	1B.1
<b><i>Hydroprogne caspia</i></b> Caspian tern	ABNNM08020	None	None	G5	S4	
<b><i>Hypogymnia schizidiata</i></b> island tube lichen	NLT0032640	None	None	G2G3	S2	1B.3



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Hypomesus transpacificus</i></b> Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
<b><i>Icaricia icarioides missionensis</i></b> Mission blue butterfly	IILEPG801A	Endangered	None	G5T1	S2	
<b><i>Icaricia icarioides pheres</i></b> Pheres blue butterfly	IILEPG8019	None	None	G5TX	SX	
<b><i>Isocoma arguta</i></b> Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
<b><i>Lasionycteris noctivagans</i></b> silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G3G4	S4	
<b><i>Lasiurus frantzii</i></b> western red bat	AMACC05080	None	None	G4	S3	SSC
<b><i>Lasthenia conjugens</i></b> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<b><i>Laterallus jamaicensis coturniculus</i></b> California black rail	ABNME03041	None	Threatened	G3T1	S1	FP
<b><i>Lathyrus jepsonii</i> var. <i>jepsonii</i></b> Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
<b><i>Layia carnosa</i></b> beach layia	PDAST5N010	Threatened	Endangered	G2	S2	1B.1
<b><i>Leptosiphon rosaceus</i></b> rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
<b><i>Lessingia germanorum</i></b> San Francisco lessingia	PDAST5S010	Endangered	Endangered	G1	S1	1B.1
<b><i>Lichnanthe ursina</i></b> bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
<b><i>Lilaeopsis masonii</i></b> Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
<b><i>Masticophis lateralis euryxanthus</i></b> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
<b><i>Meconella oregana</i></b> Oregon meconella	PDPAP0G030	None	None	G2G3	S2	1B.1
<b><i>Melospiza melodia maxillaris</i></b> Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC
<b><i>Melospiza melodia pusillula</i></b> Alameda song sparrow	ABPBXA301S	None	None	G5T2T3	S2S3	SSC
<b><i>Melospiza melodia samuelis</i></b> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<b><i>Microcina leei</i></b> Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Microcina tiburona</i></b> Tiburon micro-blind harvestman	ILARA47060	None	None	G1	S2	
<b><i>Microseris paludosa</i></b> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
<b><i>Microtus californicus sanpabloensis</i></b> San Pablo vole	AMAFF11034	None	None	G5T1T2	S1S2	SSC
<b><i>Monolopia gracilens</i></b> woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
<b><i>Nannopterum auritum</i></b> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<b><i>Neotoma fuscipes annectens</i></b> San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Nyctinomops macrotis</i></b> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Pentachaeta bellidiflora</i></b> white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
<b><i>Plagiobothrys chorisianus var. chorisianus</i></b> Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
<b><i>Plagiobothrys diffusus</i></b> San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
<b><i>Plagiobothrys glaber</i></b> hairless popcornflower	PDBOR0V0B0	None	None	GX	SX	1A
<b><i>Pogonichthys macrolepidotus</i></b> Sacramento splittail	AFCJB34020	None	None	G3	S3	SSC
<b><i>Polemonium carneum</i></b> Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
<b><i>Polygonum marinense</i></b> Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
<b><i>Pomatiopsis californica</i></b> Pacific walker	IMGASJ9020	None	None	G1	S1	
<b><i>Rallus obsoletus obsoletus</i></b> California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
<b><i>Rana boylli pop. 4</i></b> foothill yellow-legged frog - central coast DPS	AAABH01054	Proposed Threatened	Endangered	G3T2	S2	
<b><i>Rana draytonii</i></b> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b><i>Reithrodontomys raviventris</i></b> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Sanicula maritima</i> adobe sanicle	PDAP11Z0D0	None	Rare	G2	S2	1B.1
<i>Scapanus latimanus insularis</i> Angel Island mole	AMABB02032	None	None	G5T1	SH	
<i>Scapanus latimanus parvus</i> Alameda Island mole	AMABB02031	None	None	G5T1Q	SH	SSC
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<i>Silene verecunda ssp. verecunda</i> San Francisco campion	PDCAR0U213	None	None	G5T1	S1	1B.2
<i>Sorex ornatus sinuosus</i> Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
<i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
<i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
<i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<i>Streptanthus albidus ssp. peramoenus</i> most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
<i>Streptanthus glandulosus ssp. niger</i> Tiburon jewelflower	PDBRA2G0T0	Endangered	Endangered	G4T1	S1	1B.1
<i>Stuckenia filiformis ssp. alpina</i> northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
<i>Suaeda californica</i> California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
<i>Symphotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Thaleichthys pacificus</i> eulachon	AFCHB04010	Threatened	None	G5	S1	
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	





Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Trifolium amoenum</i> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Triphysaria floribunda</i> San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
<i>Triquetrella californica</i> coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
<i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
<i>Vespericola marinensis</i> Marin hesperian	IMGASA4140	None	None	G2	S2	
<i>Viburnum ellipticum</i> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC
<i>Zapus trinotatus orarius</i> Point Reyes jumping mouse	AMAFH01031	None	None	G5T1T3Q	S1S3	SSC

Record Count: 152

APPENDIX E U.S. FISH AND WILDLIFE SERVICE  
SPECIES LIST

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# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:  
Project Code: 2023-0017109  
Project Name: Wildcat Canyon Flow Trail

November 17, 2022

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

## To Whom It May Concern:

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

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

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

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

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

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

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

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

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

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Attachment(s):

- Official Species List



## **Official Species List**

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

This species list is provided by:

### **Sacramento Fish And Wildlife Office**

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

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## Project Summary

Project Code: 2023-0017109  
Project Name: Wildcat Canyon Flow Trail  
Project Type: Recreation - New Construction  
Project Description: Bicycle trail construction  
Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.94018065,-122.29431729633389,14z>



Counties: Contra Costa County, California

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## Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

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

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

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

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

### Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered

### Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8035">https://ecos.fws.gov/ecp/species/8035</a>	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

## Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5524">https://ecos.fws.gov/ecp/species/5524</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened
Tidewater Goby <i>Eucyclogobius newberryi</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a>	Endangered

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Flowering Plants

NAME	STATUS
Pallid Manzanita <i>Arctostaphylos pallida</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8292">https://ecos.fws.gov/ecp/species/8292</a>	Threatened
Santa Cruz Tarplant <i>Holocarpha macradenia</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6832">https://ecos.fws.gov/ecp/species/6832</a>	Threatened

## Critical habitats

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> <a href="https://ecos.fws.gov/ecp/species/5524#crithab">https://ecos.fws.gov/ecp/species/5524#crithab</a>	Final
Santa Cruz Tarplant <i>Holocarpha macradenia</i> <a href="https://ecos.fws.gov/ecp/species/6832#crithab">https://ecos.fws.gov/ecp/species/6832#crithab</a>	Final

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## **IPaC User Contact Information**

Agency: Nomad Ecology

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Zip: 94553

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Phone: 9252281027

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## APPENDIX F SITE PHOTOGRAPHS

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Photo 1. Looking southeast over southern portion of study area showing senesced vegetation observed during September survey.



Photo 2. View looking north-northwest up the Mezue Trail from the southern end of the study area.



Photo 3. Looking east over study area where it crosses the Mezue Trail.



Photo 4. Overview of the study area looking west over study area where it crosses the Mezue Trail.





Photo 5. Overview of the study area looking west. Leonard's Trail visible at lower left.



Photo 6. Wild oats and annual brome grassland near the northeastern portion of the study area.



Photo 7. Wild oats and annual brome grassland with high cover of wild oats\* and annual bromes\* near the northeastern portion of the study area.



Photo 8. Wild oats and annual brome grassland with flax\* and long-beaked filaree\* near the central portion of the study area.





Photo 9. Wild oats and annual brome grassland with patch of hayfield tarweed near the southern portion of the study area.



Photo 10. Italian thistle and milk thistle fields with high cover of Italian thistle\* in the central portion of the study area.





Photo 11. Italian thistle and milk thistle fields showing milk thistle\* basal rosettes in the central portion of the study area.



Photo 12. Poison hemlock\* patch in the central portion of the study area with early growth of poison hemlock\* individuals and other non-native forbs.





Photo 13. California poppy – lupine fields in the study area with California poppy and *Lupinus* spp. among other forbs.



Photo 14. Artichoke thistle\* basal rosettes observed in the study area.

## APPENDIX G PLANT SPECIES OBSERVED ON SITE

SPECIES NAME	COMMON NAME	ORIGIN	COLLECTION	LOCALLY RARE	CAL-IPC RATING	CDFA RATING
<b>EUDICOTS</b>						
<b>Apiaceae – Carrot Family</b>						
<i>Conium maculatum</i>	poison hemlock	Non-Native	---	---	Moderate	---
<b>Asteraceae – Sunflower Family</b>						
<i>Anthemis cotula</i>	mayweed	Non-Native	---	---	---	---
<i>Baccharis pilularis</i> subsp. <i>consanguinea</i>	coyote brush	Native	---	---	---	---
<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle	Non-Native	---	---	Moderate	On List
<i>Carduus tenuiflorus</i>	slender flowered thistle	Non-Native	---	---	Limited	On List
<i>Centaurea calcitrapa</i>	purple star thistle	Non-Native	---	---	Moderate	On List
<i>Cirsium vulgare</i>	bull thistle	Non-Native	---	---	Moderate	On List
<i>Cynara cardunculus</i> subsp. <i>flavescens</i>	artichoke thistle	Non-Native	---	---	Moderate	On List
<i>Helminthotheca echioides</i>	bristly ox-tongue	Non-Native	---	---	Limited	---
<i>Hemizonia congesta</i> subsp. <i>luzulifolia</i>	hayfield tarweed	Native	---	---	---	---
<i>Hypochaeris glabra</i>	smooth cat's ear	Non-Native	---	---	Limited	---
<i>Hypochaeris radicata</i>	rough cat's ear	Non-Native	---	---	Moderate	---
<i>Lactuca serriola</i>	prickly lettuce	Non-Native	---	---	---	---
<i>Madia sativa</i>	coast tarweed	Native	---	---	---	---
<i>Matricaria discoidea</i>	pineapple weed	Native	---	---	---	---
<i>Pseudognaphalium californicum</i>	ladies tobacco	Native	---	---	---	---
<i>Silybum marianum</i>	milk-thistle	Non-Native	---	---	Limited	---
<i>Soliva sessilis</i>	common soliva	Non-Native	---	---	---	---
<i>Sonchus asper</i> subsp. <i>asper</i>	prickly sowthistle	Non-Native	---	---	---	---
<i>Sonchus oleraceus</i>	common sowthistle	Non-Native	---	---	---	---
<i>Symphotrichum chilense</i>	Pacific aster	Native	---	---	---	---
<i>Urospermum picroides</i>	prickly goldenfleece	Non-Native	---	---	---	---
<i>Wyethia angustifolia</i>	narrowleaf mule ears	Native	---	---	---	---
<b>Boraginaceae – Borage or Waterleaf Family</b>						
<i>Amsinckia intermedia</i>	common fiddleneck	Native	---	---	---	---

SPECIES NAME	COMMON NAME	ORIGIN	COLLECTION	LOCALLY RARE	CAL-IPC RATING	CDFA RATING
<b>Brassicaceae – Mustard Family</b>						
<i>Brassica nigra</i>	black mustard	Non-Native	---	---	Moderate	---
<i>Hirschfeldia incana</i>	hoary mustard	Non-Native	---	---	Moderate	---
<i>Lepidium nitidum</i>	shining peppergrass	Native	---	---	---	---
<i>Lepidium strictum</i>	prostrate peppergrass	Native	---	---	---	---
<i>Raphanus raphanistrum</i>	jointed charlock	Non-Native	---	---	---	---
<i>Raphanus sativus</i>	wild radish	Non-Native	---	---	---	---
<i>Sinapis arvensis</i>	charlock	Native	---	---	Limited	---
<i>Sisymbrium officinale</i>	hedge mustard	Non-Native	---	---	---	---
<b>Caryophyllaceae – Pink Family</b>						
<i>Silene gallica</i>	windmill pink	Non-Native	HB	---	---	---
<i>Spergularia rubra</i>	sandspurrey	Non-Native	---	---	---	---
<b>Convolvulaceae – Morning-Glory Family</b>						
<i>Calystegia subacaulis</i> subsp. <i>subacaulis</i>	hill morning glory	Native	---	---	---	---
<i>Convolvulus arvensis</i>	bindweed	Non-Native	---	---	---	On List
<b>Cucurbitaceae – Gourd Family</b>						
<i>Marah fabacea</i>	California man-root	Native	---	---	---	---
<b>Fabaceae – Pea Family</b>						
<i>Acmispon wrangelianus</i>	Chilean trefoil	Native	---	---	---	---
<i>Lotus corniculatus</i>	birdfoot trefoil	Non-Native	---	---	---	---
<i>Lupinus bicolor</i>	dove lupine	Native	---	---	---	---
<i>Lupinus formosus</i> var. <i>formosus</i>	summer lupine	Native	---	---	---	---
<i>Lupinus microcarpus</i> var. <i>densiflorus</i>	dense-flowered lupine	Native	---	---	---	---
<i>Lupinus microcarpus</i> var. <i>microcarpus</i>	chick lupine	Native	---	---	---	---
<i>Lupinus succulentus</i>	succulent lupine	Native	---	---	---	---
<i>Medicago polymorpha</i>	burclover	Non-Native	---	---	Limited	---
<i>Trifolium angustifolium</i>	narrow-leaved clover	Non-Native	---	---	---	---
<i>Trifolium dubium</i>	shamrock clover	Non-Native	---	---	---	---
<i>Trifolium glomeratum</i>	clustered clover	Non-Native	---	---	---	---
<i>Trifolium hirtum</i>	rose clover	Non-Native	---	---	Limited	---
<i>Trifolium repens</i>	white clover	Non-Native	---	---	---	---



SPECIES NAME	COMMON NAME	ORIGIN	COLLECTION	LOCALLY RARE	CAL-IPC RATING	CDFA RATING
<i>Trifolium subterraneum</i>	subterranean clover	Non-Native	---	---	---	---
<i>Trifolium tomentosum</i>	woolly clover	Non-Native	---	---	---	---
<i>Vicia sativa</i> subsp. <i>sativa</i>	spring vetch	Non-Native	---	---	---	---
<i>Vicia villosa</i> subsp. <i>varia</i>	smooth vetch	Non-Native	---	---	---	---
<b>Fagaceae – Oak Family</b>						
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	coast live oak	Native	---	---	---	---
<b>Geraniaceae – Geranium Family</b>						
<i>Erodium botrys</i>	long-beaked filaree	Non-Native	---	---	---	---
<i>Erodium cicutarium</i>	red-stemmed filaree	Non-Native	---	---	Limited	---
<i>Erodium moschatum</i>	white-stem filaree	Non-Native	---	---	---	---
<i>Geranium dissectum</i>	cut-leaf geranium	Non-Native	---	---	Moderate	---
<i>Geranium molle</i>	dovefoot geranium	Non-Native	---	---	---	---
<b>Lamiaceae – Mint Family</b>						
<i>Stachys rigida</i> var. <i>quercetorum</i>	hedge nettle	Native	---	---	---	---
<b>Linaceae – Flax Family</b>						
<i>Linum bienne</i>	flax	Non-Native	---	---	---	---
<b>Malvaceae – Mallow Family</b>						
<i>Malva parviflora</i>	cheeseweed	Non-Native	---	---	---	---
<b>Myrsinaceae – Myrsine Family</b>						
<i>Lysimachia arvensis</i>	scarlet pimpernel	Non-Native	---	---	---	---
<b>Orobanchaceae – Broomrape Family</b>						
<i>Bellardia trixago</i>	bellardia	Non-Native	---	---	Limited	---
<i>Triphysaria pusilla</i>	dwarf owl's clover	Native	---	---	---	---
<b>Oxalidaceae – Oxalis Family</b>						
<i>Oxalis pes-caprae</i>	bermuda buttercup	Non-Native	---	---	Moderate	---
<b>Papaveraceae – Poppy Family</b>						
<i>Eschscholzia californica</i>	California poppy	Native	---	---	---	---
<b>Plantaginaceae – Plantain Family</b>						
<i>Plantago lanceolata</i>	English plantain	Non-Native	---	---	Limited	---
<b>Polygonaceae – Buckwheat Family</b>						
<i>Polygonum aviculare</i> subsp. <i>depressum</i>	common knotweed	Non-Native	---	---	---	---
<i>Rumex acetosella</i>	sheep sorrel	Non-Native	---	---	Moderate	---

SPECIES NAME	COMMON NAME	ORIGIN	COLLECTION	LOCALLY RARE	CAL-IPC RATING	CDFA RATING
<i>Rumex pulcher</i>	fiddle dock	Non-Native	---	---	---	---
<b>Ranunculaceae – Buttercup Family</b>						
<i>Ranunculus californicus</i> var. <i>californicus</i>	California buttercup	Native	---	---	---	---
<i>Ranunculus muricatus</i>	spiny buttercup	Non-Native	---	---	---	---
<b>Rosaceae – Rose Family</b>						
<i>Rubus ursinus</i>	California blackberry	Native	---	---	---	---
<b>Rubiaceae – Madder Family</b>						
<i>Sherardia arvensis</i>	field madder	Non-Native	---	---	---	---
<b>Scrophulariaceae – Figwort Family</b>						
<i>Scrophularia californica</i>	bee plant	Native	---	---	---	---
<b>MONOCOTS</b>						
<b>Agavaceae – Agave Family</b>						
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	soap plant	Native	---	---	---	---
<b>Iridaceae – Iris Family</b>						
<i>Romulea rosea</i> var. <i>australis</i>	rosy romulea	Non-Native	---	---	---	---
<b>Juncaceae – Rush Family</b>						
<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush	Native	---	---	---	---
<i>Juncus patens</i>	common rush	Native	---	---	---	---
<b>Poaceae – Grass Family</b>						
<i>Avena barbata</i>	wild oats	Non-Native	---	---	Moderate	---
<i>Avena fatua</i>	oats	Non-Native	---	---	Moderate	---
<i>Brachypodium distachyon</i>	false brome	Non-Native	---	---	Moderate	---
<i>Bromus catharticus</i> var. <i>elatus</i>	Chilean brome	Non-Native	---	---	---	---
<i>Bromus diandrus</i>	ripgut brome	Non-Native	---	---	Moderate	---
<i>Bromus hordeaceus</i>	soft chess	Non-Native	---	---	Limited	---
<i>Cynosurus echinatus</i>	dogtail grass	Non-Native	---	---	Moderate	---
<i>Elymus triticoides</i>	creeping wildrye	Native	---	---	---	---
<i>Festuca bromoides</i>	brome fescue	Non-Native	---	---	---	---
<i>Festuca myuros</i>	foxtail fescue	Non-Native	---	---	Moderate	---
<i>Festuca perennis</i>	Italian ryegrass	Non-Native	---	---	Moderate	---
<i>Hordeum marinum</i> subsp. <i>gussoneanum</i>	Mediterranean barley	Non-Native	---	---	Moderate	---

SPECIES NAME	COMMON NAME	ORIGIN	COLLECTION	LOCALLY RARE	CAL-IPC RATING	CDFA RATING
<i>Hordeum murinum</i> subsp. <i>leporinum</i>	hare barley	Non-Native	---	---	Moderate	---
<i>Phalaris minor</i>	little-seeded canary grass	Non-Native	---	---	---	---
<i>Poa annua</i>	annual bluegrass	Non-Native	---	---	---	---
<i>Stipa lepida</i>	foothill needlegrass	Native	---	C	---	---
<i>Stipa pulchra</i>	purple needlegrass	Native	---	C	---	---
<b>Themidaceae – Brodiaea Family</b>						
<i>Dipterostemon capitatus</i> subsp. <i>capitatus</i>	blue dicks	Native	---	---	---	---

# APPENDIX H   AQUATIC RESOURCE DELINEATION TECHNICAL MEMORANDUM

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May 26, 2022

Sean Connelly  
Trails Coordinator  
Planning, Trails, and GIS  
East Bay Regional Park District  
2950 Peralta Oaks Court  
Oakland, CA 94605

**Technical Memorandum:** Results of Aquatic Resources Delineation for the East Bay Regional Park District's Wildcat Canyon Regional Park Trail Project, Richmond, Contra Costa County, California

Dear Mr. Connelly,

Nomad Ecology, LLC conducted an aquatic resources delineation of East Bay Regional Park District's Trail Project in Wildcat Canyon Regional Park, located in Richmond, Contra Costa County, California (Figure 1). No wetlands were identified within the study boundary; therefore an Aquatic Resources Delineation Report for submission to U.S. Army Corps of Engineers' (USACE) will not be prepared. This memorandum provides documentation of the Aquatic Resources Delineation and includes a summary of the methodology and results.

#### **SITE VISIT METHODOLOGY**

Nomad Ecology senior vegetation ecologist Erin McDermott conducted an Aquatic Resources Delineation of the study area on March 31, 2022, with a second visit on May 24, 2022. The field study was conducted in accordance with the *Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008), and *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (California State Water Resources Control Board 2019).

In order to delineate potentially regulated aquatic features on site, site topography and field characteristics were evaluated to determine the limits of potentially jurisdictional wetlands within the study area. These include: the prevalence of hydrophytic vegetation (e.g. plant species typically adapted for life in saturated soil conditions), presence of hydric soils, and/or evidence of inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water. Vegetation and wetland hydrology data was collected at one data point location using the Wetland Determination Data Form – Arid West Region. The location of the single data point (data point 1-A) was mapped in the field using a sub-meter accurate global positioning system (GPS) unit.

The boundaries of any potentially USACE jurisdictional waters were determined using the OHWM indicators including a topographic break in slope, change in vegetation characteristics, and change in sediment characteristics. Other indicators used to determine the limits of OHWM can include scour lines, shelving, and litter deposits. Physical and biological indicators surveyed for included evidence of water flow, a channel bed and bank, scour, drainage patterns, and wetland vegetation.



## RESULTS

The study area consists of grassland vegetation on a west-facing slope. The study area extends from 400 feet elevation at the southern end of the study area, upslope to 900 feet elevation at the northern end. A grassy upland swale was observed in the southern part of the study area at approximately 450 feet elevation. A wetland determination data point (1-A) was established here and data was collected to complete the wetland determination data form (attached) to determine if the site was a wetland. The swale is visible as a linear depression on Google Earth imagery and the USGS 7.5 minute Richmond topographic map. The swale is not included in the National Wetland Inventory (USFWS 2022) or the USGS Hydrogeography data set (USGS 2022). Photos of this area are attached (Photos 1-3).

The swale was dominated by facultative wetland species, primarily Italian ryegrass (*Festuca perennis*\*). The swale met the hydrophytic vegetation wetland criteria using the Dominance Test because it was dominated by only one species, Italian ryegrass\* which has a FAC indicator status.<sup>1</sup> Italian ryegrass\* was also present on the adjacent slopes that were clearly upland, however further from the swale the slopes become dominated by slender oats (*Avena barbata*\*; NL). Other species observed include spiny buttercup (*Ranunculus muricatus*\*; FACW), Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*\*; UPL), hoary mustard (*Hirschfeldia incana*\*; UPL), bristly ox-tongue (*Helminthotheca echioides*\*; FAC), mayweed (*Anthemis cotula*\*; FACU), and flax (*Linum bienne*\*; UPL).

The soil met the hydric soil definition because it was a dark soil (10YR2/2) with mottles (2.5YR4/6) along pore linings which meets indicator Redox Dark Surface. Soils were clay in texture but were loose and loamy with small mammal burrows present.

One wetland hydrology indicator was observed: Drainage (Riverine), because it is in a linear topographic depression that drains downslope to a tributary of Wildcat Creek. However this single hydrology indicator does not meet the wetland hydrology criteria. A few scattered hoofprints were present, likely due to clay soils that remain saturated after precipitation events. This area likely stays saturated at times in the winter following precipitation events due to its clay content and its location at the base of a slope, however it does not receive sufficient flow or remain saturated for sufficient duration to develop hydrology indicators.

The upland swale was determined to not be a wetland regulated by USACE because it does not meet all three USACE wetland criteria. It was determined to not be a wetland regulated by the California State Water Resources Control Board or Regional Water Quality Control Board because it does not meet their three wetland criteria including continuous saturation that is causing anaerobic conditions in the upper substrate and the site is dominated by hydrophytes or the area lacks vegetation. Similarly it was determined to not be a stream regulated by California Department of Fish and Wildlife (CDFW) because it does not have a clear bed or bank or OHWM mark.

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\* Denotes a species not native to California.

<sup>1</sup> Wetland Indicator Status Code Definitions (Lichvar et. al. 2016):

OBL	Obligate Wetland	Hydrophyte	Almost always occur in wetlands
FACW	Facultative Wetland	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	Hydrophyte	Occur in wetlands and non-wetlands
FACU	Facultative Upland	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
UPL	Obligate Upland	Nonhydrophyte	Almost never occur in wetlands
NL	Not Listed		

The upland swale connects directly to a tributary of Wildcat Creek. The tributary begins downslope of the swale outside of the study area. The tributary has a defined bed and bank and evidence of scour, and would be considered a stream by CDFW and a Waters of the U.S. by USACE. The tributary flows south, passes through a culvert under Wildcat Canyon Parkway, and continues south where it joins Wildcat Canyon Creek.

Please contact me at (925) 228-1019 if you have any questions.

Sincerely,



Erin L. McDermott  
Principal  
Senior Vegetation and Restoration Ecologist  
Certified Consulting Botanist – CCB #0028  
ISA Certified Arborist – WE7318A  
Nomad Ecology LLC

**ATTACHMENTS:**

Figure 1. Location of Wetland Determination Data Point  
Photographs  
Arid West Wetland Determination Data Form

## REFERENCES

- California State Water Resources Control Board 2019. State Wetland Definition and Dredge and Fill Procedures. April.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Lichvar, R.W., and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 30: 1-17. April.
- U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. MS: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Service (USFWS). 2022. National Wetlands Inventory (web application), Available at <http://www.fws.gov/wetlands/index.html>.
- U.S. Geological Survey (USGS). 2022. National Hydrogeography Dataset National Map Download viewer (web application). Available at <http://viewer.nationalmap.gov/basic/?basemap=b1&category=nhd&title=NHD%20View>

## PHOTOGRAPHS



Photo 1. View of the upland swale feature that runs north to south. Facing west. May 24, 2022.



Photo 2. View of upland swale standing in the swale looking at location of wetland determination data point 1-A. Facing north upslope. May 24, 2022.





Photo 3. View of upland swale from standing in swale at location of wetland determination data point 1-A. Facing south downslope. The tributary begins under the trees in the distance at the end of the swale. May 24, 2022.