

# INLAND FEEDER – FOOTHILL PUMP STATION INTERTIE PROJECT

Initial Study/Mitigated Negative Declaration  
APPENDIX C

The Metropolitan Water District of Southern California  
700 North Alameda Street  
Los Angeles, CA 90012



Report Number ER 1694

May 2024

# Appendix C

## **Biological Resources**



# **C1 Biological Resources Technical Report**







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March 18, 2024

Ms. Michelle Morrison  
Environmental Planning Section  
The Metropolitan Water District of Southern California  
700 North Alameda Street,  
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**Subject:** Inland Feeder - Foothill Pump Station Intertie Project Biological Resources Technical Report

Dear Ms. Michelle Morrison:

This letter report documents the findings of a reconnaissance-level biological resources survey conducted by Environmental Science Associates (ESA) for the Metropolitan Water District of Southern California's (Metropolitan) Inland Feeder Foothill Pump Station Intertie Project (project). This report provides an overview of the proposed project, survey methodology, applicable regulatory framework, existing conditions, conclusions and impact assessments, and recommended avoidance and minimization measures.

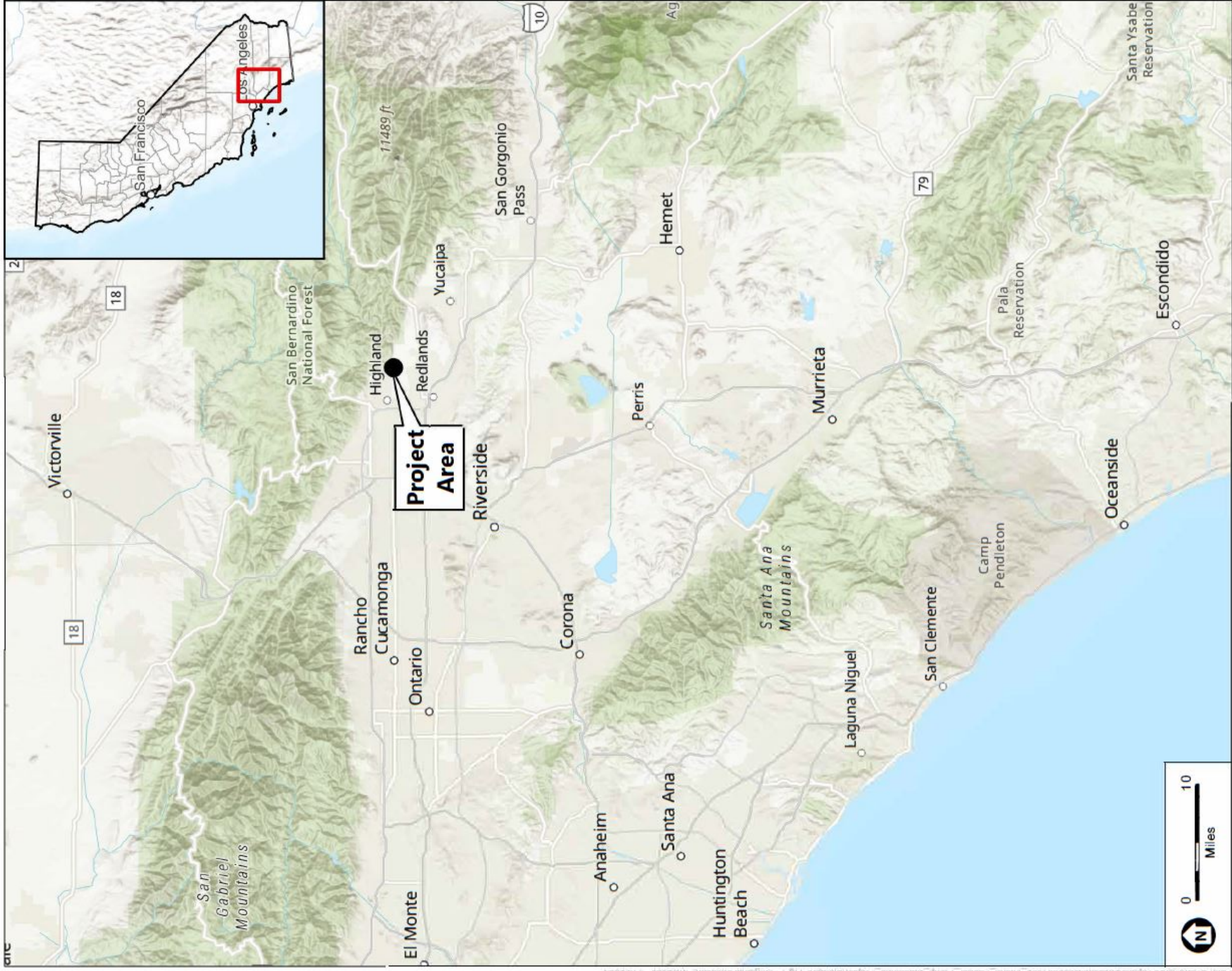
## Project Location/Study Area

The approximately 6.61-acre project area is generally located north of the Santa Ana River, south of Greenspot Road, east of State Route 210, and west of State Route 38 in the City of Highland, San Bernardino County, California. More specifically, the project area is bounded by Greenspot Road and residential development to the north, the Santa Ana River and open space to the south, and large-lot, single family residences and open space to the east and west (**Figure 1, Regional Location**). The project area includes an existing fenced and graded triangular property that encompasses Metropolitan and San Bernardino Valley Municipal Water District (SBVMWD) facilities. The 59.96-acre study area includes the project area and a 500-ft buffer surrounding the project area (**Figure 2, Project Location**).

## Project Description

To enhance Metropolitan's water delivery flexibility in response to drought conditions and limited State Water Project (SWP) allocations, Metropolitan is proposing two new pipeline connections between the Inland Feeder and the SBVMWD-Inland Feeder Interconnection Line 1 and SBVMWD's Foothill Pump Station (FPS).

Two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground hydropneumatic surge tanks (HST), and associated appurtenant structures would be constructed (Figure 2) in two stages as outlined below.



SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 1**  
Regional Location







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SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 2**  
Project Location



Ms. Michelle Morrison  
March 18, 2024  
Page 4

Stage 1 would include construction of the components mainly located within the existing fenced facility. This would include construction of an approximately 400-foot long, 54-inch supply connection pipeline, an approximately 750-foot long, 54-inch discharge connection pipeline, a 50-foot by 40-foot underground vault, four aboveground HSTs on concrete pads, and appurtenant structures. Additionally, the proposed project would include installation of a new fence-line along the western boundary of the project area to accommodate the supply and discharge connection components.

Stage 2 construction activities would occur along the southern portion of the project area, located mainly outside of the fenced facility, and would include a 45-foot by 40-foot underground vault, a portion of the 54-inch discharge connection pipeline, all associated appurtenant structures, and final connections to the existing Inland Feeder pipeline.

Most of the construction activities would occur during daylight hours, occasional nighttime construction activities may be required to shutdown the Inland Feeder and install the tie-in connection. Operation and maintenance activities at the FPS and Inland Feeder would be similar to existing conditions.

## Background

In October 2022, ECORP conducted a protocol-level San Bernardino kangaroo rat (SBKR; *Dipodomys merriami parvus*) trapping survey within portions of the proposed project area, and five rodent species were captured: SBKR, San Diego pocket mouse (*Chaetodipus fallax*), Bryant's woodrat (*Neotoma bryanti*), northern Baja deer mouse (*Peromyscus fraterculus*), and deer mouse (*Peromyscus maniculatus*) (ECORP 2022). SBKR is federally listed as endangered, state candidate for listing as endangered, and a species of special concern. As a result, the project team, in coordination with U.S. Fish and Wildlife Service (USFWS), performed additional biological surveys described below.

In March 2023, ESA conducted a SBKR burrow survey to determine if potential SBKR burrows occur within the project area (ESA 2023a). Based on the findings of the SBKR burrow survey conducted within the southern portion of the project area and in coordination with USFWS, subsequent motion-detecting cameras were recommended to identify kangaroo rat presence within the updated temporary and permanent impact areas. Thus, the nighttime activity survey was designed to confirm where exclusionary fencing should be installed within the southern extent of the project site.

The nighttime small mammal activity surveys were conducted in March and July 2023 using nighttime-vision equipment to determine nighttime small mammal activity in the project area (ESA 2023b; **Attachment A, Results of the 2023 Nighttime Small Mammal Activity Surveys**). The March 2023 nighttime small mammal activity survey was conducted within the exclusion fencing areas previously proposed for the project, while the July 2023 nighttime small mammal activity survey was conducted within a larger area and includes burrows where previous SBKR were captured to serve as a control. Although two small mammals, California ground squirrel and desert cottontail, were frequently detected by cameras in the nighttime activity survey area during the





Ms. Michelle Morrison  
March 18, 2024  
Page 5

March 2023 nighttime small mammal activity survey effort, no rodent species were observed. The July 2023 nighttime activity survey effort resulted in the detection of four rodent genus including: deer mouse (*Peromyscus* sp.), kangaroo rat (*Dipodomys* sp.), pocket mouse (*Chaetodipus* sp.), and woodrat (*Neotoma* sp.). Kangaroo rat individuals were confirmed at six of the 15 camera locations. There is no way to confirm the kangaroo rat to species level during the photo captures. Both SBKR and Dulzura kangaroo rat (*Dipodomys simulans*) ranges overlap with the project area and study area. Therefore, additional trapping efforts would be required to confirm the species of kangaroo rat detected during the nighttime small mammal activity survey. However, it should be noted that the 2022 protocol-level SBKR trapping survey captured SBKR individuals (ECORP 2022).

## Methodology

### Database Review

Prior to visiting the site, ESA conducted a query of the following resource inventory databases to analyze the potential for sensitive resources to occur within the study area:

- California Department of Fish and Wildlife (CDFW). 2023a. California Natural Diversity Data Base (CNDDDB). Database was queried for special status species records in the Redlands USGS 7.5-minute quadrangle and eight surrounding quadrangles including San Bernadino North, Harrison Mtn, Keller Peak, Yucaipa, El Casco, Sunnymead, Riverside East, and San Bernardino South. Accessed December 21, 2023.
- California Department of Fish and Wildlife (CDFW). 2023b. California Sensitive Natural Communities List. Sacramento, CA: CDFW, Natural Heritage Division, July 5, 2022. Accessed December 21, 2023. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline>.
- California Native Plant Society (CNPS). 2023. Inventory of Rare and Endangered Vascular Plants of California. Database was queried for special status species records in the Redlands USGS 7.5-minute quadrangle and eight surrounding quadrangles including San Bernardino North, Harrison Mtn, Keller Peak, Yucaipa, El Casco, Sunnymead, Riverside East, and San Bernardino South. Accessed December 21, 2023.
- ECORP. 2022. Results of a Focused San Bernardino Kangaroo Rat Trapping Survey Conducted for the Metropolitan Water District of Southern California's Foothill Pump Station Project, Highland, San Bernardino, California. November 18, 2022.
- ESA. 2023a. Results of a San Bernardino Kangaroo Rat Burrow Survey for Metropolitan's Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California. April 13, 2023.
- ESA. 2023b. Results of Nighttime Small Mammal Activity Surveys for Metropolitan's Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California. November 16, 2023.



Ms. Michelle Morrison  
March 18, 2024  
Page 6

- Natural Resource Conservation Service (NRCS). 2023. Web Soil Survey. Accessed December 21, 2023. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- U.S. Fish and Wildlife Service (USFWS). 2023a. Critical Habitat Portal. Accessed December 21, 2023. [https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265\\_ad4fe09893cf75b8dbfb77](https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265_ad4fe09893cf75b8dbfb77).
- USFWS (U.S. Fish and Wildlife Service). 2023. National Wetland Inventory. Accessed December 21, 2023. <https://www.fws.gov/wetlands/data/Mapper.html>.

## Biological Resources Assessment

The reconnaissance-level biological resources survey was conducted by ESA biologists Brandon Mukogawa and Amanda French on December 22, 2023. Weather conditions were overcast and included a low of 64° Fahrenheit (F) and high of 64°F with wind speeds between 0-7 miles per hour. The survey was conducted within the project area and a surrounding 500-foot buffer, collectively referred to as the study area (Figure 2). The survey consisted of meandering transects throughout the study area to characterize and map plant communities and land use, and to determine the potential for special-status plants and wildlife to occur. All incidental, visual observations of flora and fauna, including sign (i.e., presence of scat) as well as any audible detections, were noted during the site visit and are discussed in the Existing Conditions section, below.

Natural communities and land use were characterized to map their extent and quantify their amounts within the study area using ArcGIS software. Plant taxonomy followed Hickman (1993), as updated in *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012), and plant community descriptions were characterized using *A Manual of California Vegetation* (Sawyer et al. 2009). Plant communities, land uses, and habitats not identified within the manuals were characterized based on species dominance. Representative photographs were taken during the survey and are provided in **Attachment B, Representative Photographs**.

## Regulatory Framework

### Federal and State Endangered Species Acts

The Federal Endangered Species Act (FESA) provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the “take” of any federally-listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. “Take” includes the destruction of a listed species’ habitat. Section 9 also prohibits several specified activities with respect to endangered and threatened plants.

The California Endangered Species Act (CESA) mandates that state agencies do not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to the FESA, CESA contains a procedure



Ms. Michelle Morrison  
March 18, 2024  
Page 7

for the CDFW to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

## Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of native birds “by any means or manner to pursue, hunt, take, capture (or) kill” any migratory birds except as permitted by regulations issued by the USFWS. The term “take” is defined by USFWS regulation to mean to “pursue, hunt, shoot, wound, kill, trap, capture or collect” any migratory bird or any part, nest, or egg of any migratory bird covered by the conventions, or to attempt those activities.

## Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., 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. Any activity resulting in the placement of “fill” material within waters of the U.S. requires a permit from USACE; “fill” is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the Regional Water Quality Control Board (RWQCB).

## Porter-Cologne Water Quality Control Act

In the absence of waters of the U.S., waters may be regulated under the Porter-Cologne Water Quality Control Act if project activities, discharges, or proposed activities or discharges could affect California's surface, coastal, or ground waters. The permit submitted by the applicant and issued by RWQCB is a Waste Discharge Requirement (WDR) in the absence of waters of the U.S.

## Native Plant Protection Act

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: “No person will import into this state, or take, possess, or sell within this state” any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land use to allow the CDFW to salvage any rare or endangered native plant material.





Ms. Michelle Morrison  
March 18, 2024  
Page 8

## Section 15380 of the California Environmental Quality Act Guidelines

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code (i.e., CESA) dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency must review a project that may have a significant effect on, for example, a species that has not been formally listed by either USFWS or CDFW; CEQA provides such an agency with the ability to protect the non-listed species from the potential impacts of a project. CEQA also calls for the protection of other significant resources, such as certain natural communities, for example. Although these resources are not currently protected, CEQA calls for an assessment of whether they would be affected and requires findings of significance regarding potential losses.

## Sections 3503 and 3513 of the California Fish and Game Code

Section 3503 of the Fish and Game Code (FGC) prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the FGC, which provides that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Section 3513 of the FGC prohibits any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. Migratory birds include all native birds in the United States, except those non-migratory game species, such as quail and turkey, which are managed by individual states.

## Section 1602 of the California Fish and Game Code

Section 1602 of the FGC requires submittal of a Notification of Lake or Streambed Alteration for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement may include, but are not limited to, excavation or “fill” placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement.

## City of Highland Municipal Codes

Chapter 8.36 of the City of Highland Municipal Code prevents the removal, relocation, or destruction of any heritage tree within City of Highland’s city limits without a proper tree removal permit and associated



Ms. Michelle Morrison  
March 18, 2024  
Page 9

environmental review (Chapter 8.36, Heritage Trees). Section 8.36.020 of the City of Highland Municipal Code defines heritage trees as any tree that meets the following criteria:

- A. All woody plants in excess of 15 feet in height and having a single trunk circumference of 24 inches or more, as measured four and one-half feet above ground level; or
- B. Multi-trunk tree(s) having a total circumference of 30 inches or more, measured four and one-half feet from ground level; or
- C. A stand of trees, the nature of which makes each dependent upon the others for survival; or
- D. Any other tree as may be deemed historically or culturally significant by the community development director or designees because of size, condition, location, or aesthetic qualities.

The definition of historic landmark includes any tree designated as an historic landmark by city council action. Trees which bear fruit or nuts (with the exemption of trees planted in a grove) and trees planted, grown, and/or held for sale by licensed nurseries and/or tree farms are exempt from the provisions of the City's code.

Tree removal is defined by the City's code as a an act which will cause a heritage tree to die, as determined by a tree expert, including, acts that inflict damage upon root systems, bark or other parts of tree by fire, application of toxic substances or operation of equipment or machinery, improper watering, changing the natural grade of the drip line area around the trunk, or attachment of signs or artificial material piercing the bark of the tree by means of nails, spikes, or other piercing objects. A Tree Removal Permit is required for the removal of all heritage trees within the city limits. A Landmark Alteration Permit is required, in addition to a Tree Removal Permit, for the removal of all trees designated as historic landmarks. The permit requirement may be waived in the case that the tree is determined to be a public health, safety, and welfare concern. Chapter 16.64.040 (Heritage Tree Preservation Requirements) further outlines the requirements of this provision, including the protection of existing trees. No trees are proposed to be removed or impacted during project activities.

Chapter 16.64.050 (Riparian Plant Conservation) establishes regulations to promote healthy and abundant riparian habitats within the City of Highland and works alongside existing regulations enforced by CDFW. This ordinance generally prohibits the removal of any riparian vegetation within 25 feet of the dripline of riparian vegetation adjacent to a "blueline stream" as indicated by the USGS Quadrangle (topographic map) or identified as a protected riparian area in a community or specific plan. The removal of any vegetation within 25 feet of the drip line of riparian vegetation along a blueline stream requires a tree removal permit and shall be subject to environmental review. The provisions of this section apply to both private and public lands within the City limits, with exceptions for emergency flood control operations and authorized water conservation measures established and authorized by an appropriate independent special district with such responsibility. No riparian vegetation is proposed to be removed during project activities.

## Existing Conditions

### Topography and Soils

Topography within the study area generally slopes in an east-west orientation, ranging between an elevation of 1,570 feet above mean sea level (amsl) and 1,500 feet amsl. A total of two soil types were mapped within the study area (see **Figure 3, Soils**), including Hanford coarse sandy loam, 2-9% slopes, and Soboba stony loamy sand, 2-9% slopes (NRCS 2023). A brief description of each soil type is provided below:

#### Hanford coarse sandy loam, 2-9% slopes

This soil type was mapped in the northern corner of the study area. It consists of well drained soils consisting of alluvium derived from granite. The depth to duripan is more than 80 inches, and the typical soil profile consists of sandy loam 0–12 inches and fine sandy loam 12–60 inches.

#### Soboba stony loamy sand, 2-9% slopes

This soil type was mapped in the majority of the study area. It consists of excessively drained soils consisting of alluvium derived from granite. The depth to duripan is more than 80 inches, and the typical soil profile consists of stony loamy sand 0–10 inches, very stony loamy sand 10–24 inches, and very stony sand 24–60 inches.

### Natural Communities and Land Cover Types

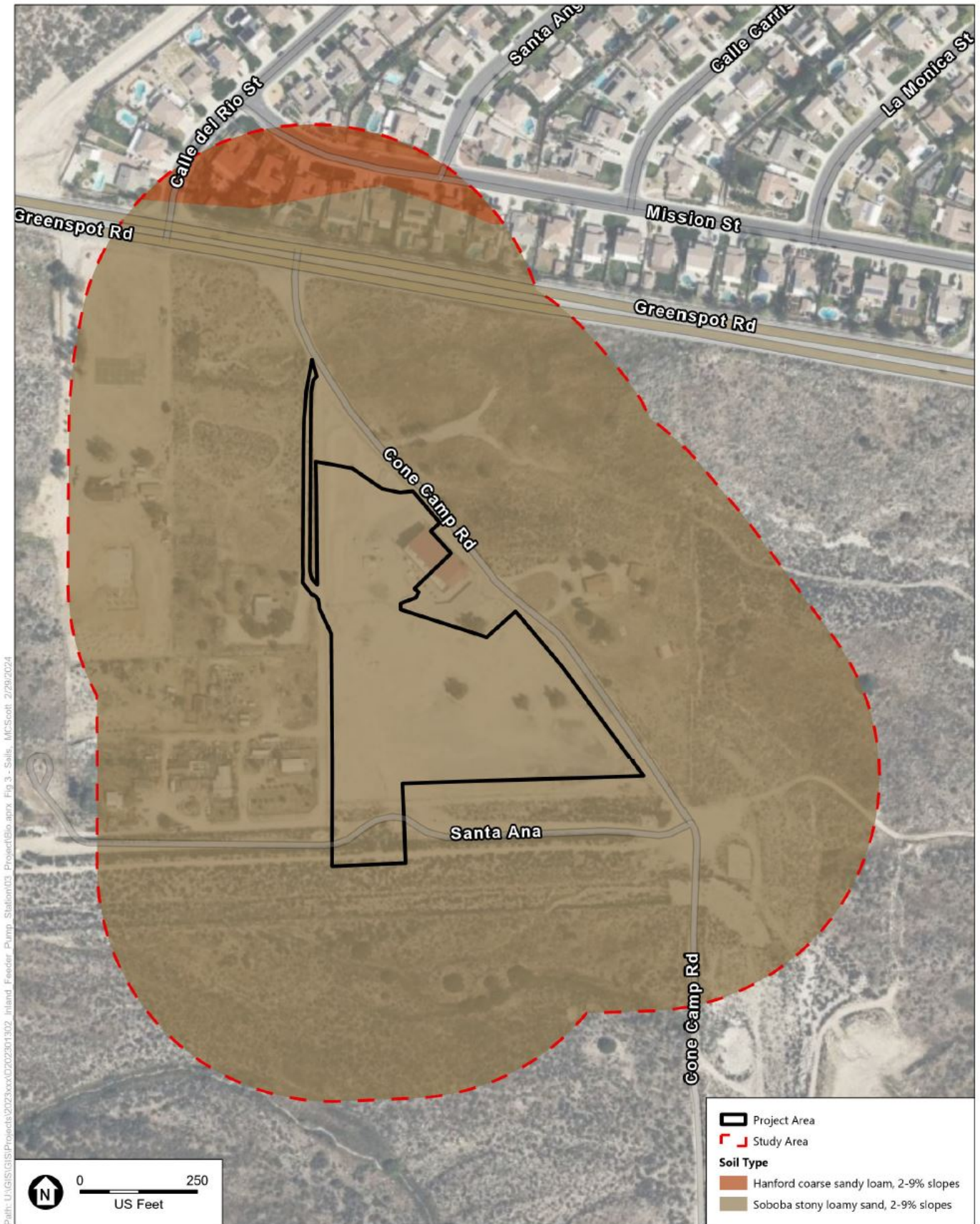
The natural communities and land cover types characterized and mapped within the study area are depicted in **Figure 4, Natural Communities and Land Cover Types**, and their respective acreages are provided in **Table 1, Natural Communities and Land Cover Types**. A complete list of plant species observed within the study area is provided in **Attachment C, Floral and Faunal Compendia**. Each natural community and land cover type is described in detail below.

#### Annual Grasses and Forbs

Annual grasses and forbs occur in two sections of the study area: the northeastern and western portions of the 500-ft buffer outside of the project area. This community is characterized by substantial disturbance including over excavation and grading and exists in a successional state due to regular mowing activities that stopped in 2014. It supports a dense herbaceous layer primarily comprised of non-native grasses and forbs such as wild oats (*Avena sp.*), ripgut brome (*Bromus diandrus*), and short-podded mustard (*Hirschfeldia incana*), interspersed with native shrub and forb species such as dove weed (*Croton setiger*) and slender buckwheat (*Eriogonum gracile* var. *gracile*).

#### Brittle Bush Scrub

Brittle bush scrub (*Encelia farinosa* shrubland alliance) was mapped within the eastern portion of the study area. This natural community is characterized by dense brittle bush (*Encelia farinosa*) with an understory of various grasses and forbs such as deerweed (*Acmispon glaber*), wild oats, brome (*Bromus* spp.), and short-podded mustard.

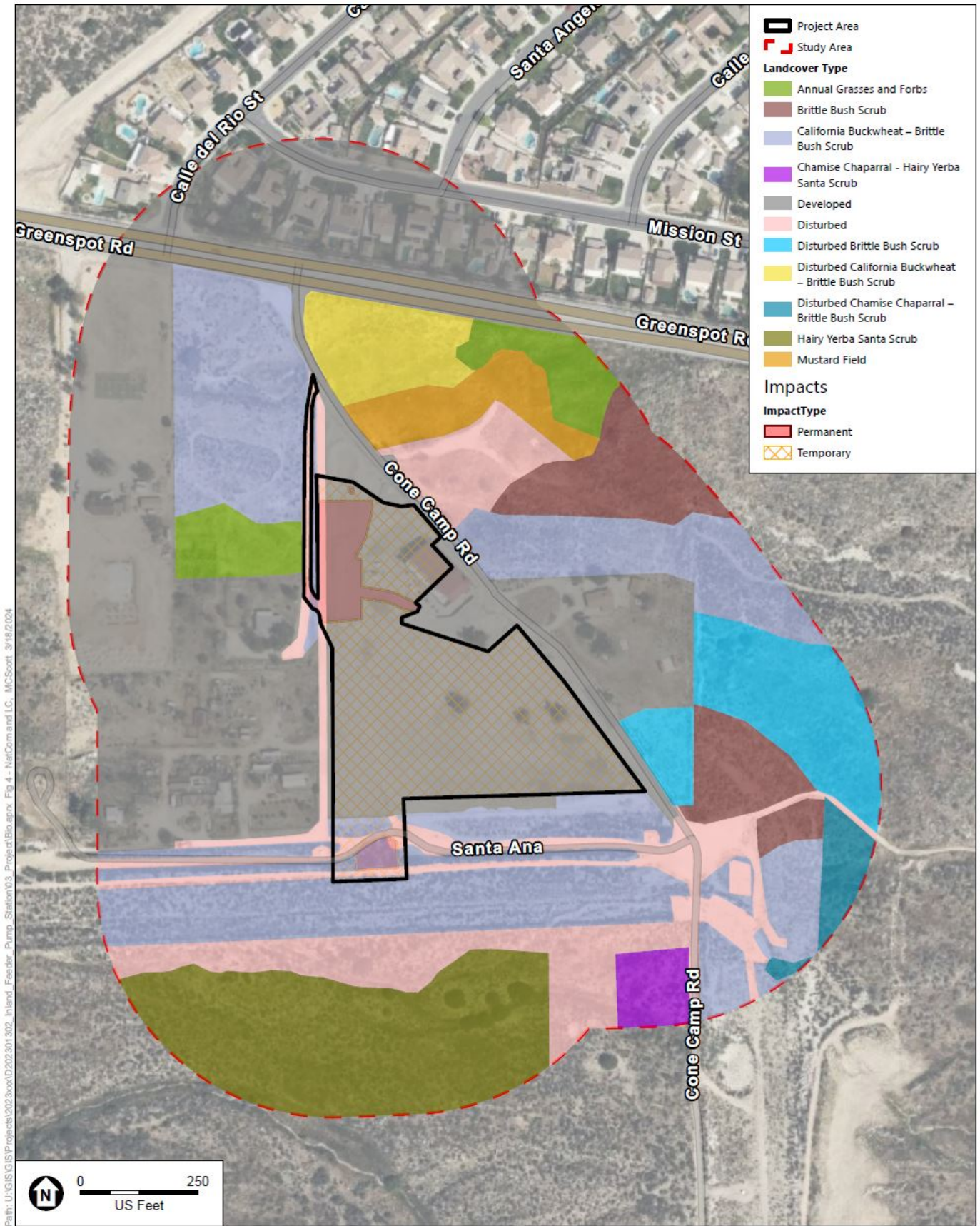


SOURCE: ESA, 2024; USGS Web Soil Survey, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 3**  
Soils





SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 4**  
 Natural Communities and  
 Land Cover Types



**TABLE 1**  
**NATURAL COMMUNITIES AND LAND COVER TYPES**

<b>Natural Community/Land Cover Type</b>	<b>Project Area (acres)</b>	<b>500-foot Buffer (acres)</b>	<b>Total Study Area (acres)</b>
Annual Grasses and Forbs	--	1.66	1.66
Brittle Bush Scrub	--	2.79	2.79
Disturbed Brittle Bush Scrub	--	2.70	2.70
California Buckwheat – Brittle Bush Scrub	0.37	12.18	12.55
Disturbed California Buckwheat – Brittle Bush Scrub	--	1.40	1.40
Chamise Chaparral – Hairy Yerba Santa Scrub	--	0.57	0.57
Disturbed Chamise Chaparral – Brittle Bush Scrub	--	0.55	0.55
Hairy Yerba Santa Scrub	--	5.37	5.37
Mustard Fields	--	1.19	1.19
Developed	5.84	18.67	24.51
Disturbed	0.40	6.27	6.67
<b>TOTAL</b>	<b>6.61</b>	<b>53.35</b>	<b>59.96</b>

SOURCE: ESA 2024

### **Disturbed Brittle Bush Scrub**

Disturbed brittle bush scrub was mapped within the eastern portion of the study area. This natural community is also characterized by brittle bush; however, it appeared as though a disturbance, such as a fire, has decreased the density of brittle bush individuals and increased the dominance of non-native grasses and forbs including wild oats and bromes.

### **California Buckwheat – Brittle Bush Scrub**

California buckwheat – brittle bush scrub was mapped throughout much of the study area, including the southern portion of the project area and surrounding areas in the 500-ft buffer outside the facility. This natural community was co-dominated by California buckwheat (*Eriogonum fasciculatum*) and brittle bush shrubs. There is a sparse herbaceous layer with wild oat, bromes and filarees such as broad leaf filaree (*Erodium botrys*).

## **Disturbed California Buckwheat – Brittle Bush Scrub**

Disturbed California buckwheat – brittle bush scrub was mapped in the northern portion of the study area. This natural community is also co-dominated by California buckwheat and brittle bush shrubs but appears disturbed (likely from historic grading due to its proximity to the road and active construction sites). This disturbance has increased the non-native herbaceous layer of wild oats and bromes relative to the shrub layer.

## **Chamise Chaparral – Hairy Yerba Santa Scrub**

Chamise chaparral – hairy yerba santa scrub was mapped in the southern portion of the 500-ft buffer outside of the project area. This natural community has a shrub layer co-dominated by chamise (*Adenostoma fasciculatum*) and hairy yerba santa (*Eriodictyon trichocalyx*). These dense shrubs were accompanied by brittle bush, California buckwheat, and deerweed with a sparse grass layer of bromes and oats.

## **Disturbed Chamise Chaparral – Brittle Bush Scrub**

Disturbed chamise chaparral – brittle bush scrub was mapped in the eastern corner of the 500-ft buffer outside of the project area. This natural community is co-dominated by chamise and brittle bush, but has a higher relative abundance of non-native herbaceous species such as bromes, oats, and filarees due to historic disturbance. This community appears to have been previously graded allowing non-natives to proliferate amongst existing shrubs.

## **Hairy Yerba Santa Scrub**

Hairy yerba santa scrub was mapped in the southern portion of the 500-ft buffer outside of the project area. This natural community is dominated by hairy yerba santa with sparse brittle bush, California buckwheat, California cholla (*Cylindropuntia californica*), and sugar bush (*Rhus ovata*) throughout. There is a sparse herbaceous layer of bromes and wild oats.

## **Mustard Fields**

Mustard fields were mapped in the northern section of the 500-ft buffer outside of the project area. This natural community is dominated by black mustard (*Brassica nigra*) with accompanying dove weed, filarees (*Erodium* sp.), and short-podded mustard. This community appeared to have historic disturbance, likely grading as it was present next to existing dirt roads and ornamentally planted vegetation.

## **Developed**

Developed land cover types represent the heavily trafficked areas including the majority of the project area, paved portion of Cone Camp Road, and residential development to the north, east, and west of the project area. These areas are either entirely or largely devoid of vegetation except for weedy non-native growth (oats and bromes) and ornamentally planted trees such as tree of heaven (*Ailanthus altissima*), citrus trees (*Citrus* sp.), eucalyptus (*Eucalyptus* sp.), and Peruvian pepper tree (*Schinus molle*).

## Disturbed

Disturbed land cover types represent dirt access roads that traverse the study area as well as areas that were recently graded due to active construction. These areas are largely devoid of vegetation except minimal shrubs (e.g. California buckwheat and brittle bush), ornamental trees (e.g. black poui [*Jacaranda mimosifolia*], Italian cypress [*Cupressus sempervirens*], and olive [*Olea europaea*]), and non-native herbaceous species (e.g. oats, bromes, filarees).

## Sensitive Natural Communities

“Sensitive” natural communities and habitats are defined by CDFW as those natural communities that have a reduced range and/or are imperiled because of various forms of development and other anthropogenic stressors, including residential and commercial expansion, various forms of agriculture, energy production, mining, etc. These communities are evaluated using NatureServe’s Heritage Methodology (NatureServe 2022), which is based on the knowledge of range and distribution of a specific vegetation type and the proportion of occurrences that are of good ecological integrity. Evaluation is done at both a global (natural range within and outside of California [G]) and subnational (State level for California [S]) level, each ranked from 1 (“critically imperiled” or very rare and threatened) to 5 (demonstrably secure). A community or habitat with a State rank of S1 through S3 are considered “sensitive” natural communities and may require review when evaluating environmental impacts (CDFW 2023a,b).

The study area is mapped by CNDDDB as occurring within Riversidean alluvial fan sage scrub habitat with a State rank of S1.1. However, the Riversidean alluvial fan sage scrub habitat indicator species, scale broom (*Lepidospartum squamatum*), was not observed as a dominant species within any of the observed natural communities. Only one scale broom individual was observed within the study area. Therefore, no natural communities present within the study area meet the criteria for Riversidean alluvial fan sage scrub. In addition, based on review of CDFW’s California Sensitive Natural Communities List, there are no sensitive natural communities within the study area (CDFW 2023b).

## Special-Status Plants

Special-status plants are defined as those that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as imperiled in some way. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status based on adopted policies (e.g., counties and cities) and/or the expertise of state resource agencies or non-profit organizations (e.g., CNPS). For purposes of this report, special-status plants are defined as follows:

- Plants that are listed or proposed for listing as threatened or endangered or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.





Ms. Michelle Morrison  
March 18, 2024  
Page 16

- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California.
- Plants considered by the CNPS to be plants about which more information is needed and plants of limited distribution (Rank 3 and 4 plants) that may be significant locally and are recommended for consideration under CEQA.
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).

A review of the CNDDDB (CDFW 2023a) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2023) revealed that many special-status plant species have been recorded within the USGS quadrangle search area (see **Attachment D, CNDDDB and CNPS Results**). The potential for special-status plant species to occur is based on existing vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. It was determined that many of the plant species generated in the database do not have the potential to occur within the study area due to the lack of suitable habitat. Such species are therefore omitted from further discussion in this report. Based on the criteria defined below, it is determined that suitable habitat for nine species occurs within or immediately adjacent to the project area (see **Table 2, Special-Status Species with Potential to Occur**).

**Low Potential:** Limited habitat exists for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent, or the preferred habitat may be present, but has undergone substantial disturbance, such that the species is not expected to occur.

**Moderate Potential:** Marginal habitat for a particular species is present. For example, the available habitat may be somewhat disturbed, however, still supports important components, such as a particular soil or community type.

**High Potential:** The study area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.

**Present:** The species was observed during the biological resources assessment.

A total of five species, including Plummer's mariposa lily (*Calochortus plummerae*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), slender-horned spineflower (*Dodecahema leptoceras*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), and Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) have a moderate to high potential to occur within the study area. Santa Ana River woollystar and slender-horned spineflower are federally and state endangered species with a high potential to occur within the study area. The remaining four species were determined to have a low potential to occur based on the lack of suitable habitat.

**TABLE 2**  
**SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR**

Common Name Scientific Name	Sensitivity Status <sup>1</sup>	Flowering Period	Preferred Habitat/Known Elevation and Distribution <sup>2</sup>	Presence/Potential to Occur
<b>Berberidaceae (Barberry Family)</b>				
Nevin's barberry <i>Berberis nevinii</i>	Federal: FE State: SE Other: 1B.1	Mar.-Jun.	Sandy soils in low-gradient washes, alluvial terraces, and canyon bottoms, along gravelly wash margins, or on coarse soils on steep, generally north-facing slopes in alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland. Elevation range extends from 70-825 meters. Found in Los Angeles, Riverside, San Bernardino, San Diego counties.	<b>Low Potential.</b> Suitable chaparral and coastal scrub habitat are present throughout the study area; however, the study area lacks the steep topography the species is commonly found in. The closest known occurrence is located over 5 miles away from the project area.
<b>Brassicaceae (Cabbage Family)</b>				
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	Federal: None State: None Other: 4.3	Jan.-Jul.	Chaparral and coastal scrub. Elevation range extends from 1-885 meters. Found in Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura counties.	<b>Moderate Potential.</b> Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. However, it is more commonly observed in dry, exposed areas rather than under shrub canopy. Additionally, known occurrences of the species are present approximately one mile east of the project area.
<b>Nyctaginaceae (Four O'clock Family)</b>				
chaparral sand-verbena <i>Abronia villosa</i> var. <i>aurita</i>	Federal: None State: None Other: 1B.1	Jan.-Sep.	Chaparral, coastal scrub, and desert dunes/sandy areas. Elevation range extends from 0-1,600 meters. Found in Los Angeles, Riverside, San Diego, San Bernardino, possibly Orange counties.	<b>Low Potential.</b> Marginal suitable coastal scrub habitat is present adjacent to the project area within the study area and the study area lacks dune habitat. Additionally, known occurrences of the species are present within Riverside County approximately 15 miles south of the project area.



Ms. Michelle Morrison  
 March 18, 2024  
 Page 18

Common Name Scientific Name	Sensitivity Status <sup>1</sup>	Flowering Period	Preferred Habitat/Known Elevation and Distribution <sup>2</sup>	Presence/Potential to Occur
<b>Polemoniaceae (Phlox Family)</b>				
Santa Ana River woollystar <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Federal: FE State: SE Other: 1B.1	Apr.–Sep.	Chaparral, coastal scrub (alluvial fan)/sandy or gravelly. Elevation range extends from 91-610 meters. Found in Riverside, San Bernardino, possibly Orange counties.	<b>High Potential.</b> Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, known occurrences of the species are present throughout the alluvial fan scrub associated with the Santa Ana River approximately 0.4 mile west and south of the project area.
<b>Polygonaceae (Buckwheat Family)</b>				
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	Federal: None State: None Other: 1B.1	Apr.–Jun.	Openings/clearings in coastal or desert sage scrub, chaparral or interface; dry slopes or flat ground; sandy soils. Elevation range extends from 275–1,220 meters. Found in Los Angeles, Riverside, San Bernardino counties.	<b>High Potential.</b> Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, one known occurrence of the species is present within the southern portion of the study area.
white-bracted spineflower <i>Chorizanthe xanti</i> var. <i>leucotheca</i>	Federal: None State: None Other: 1B.2	Apr.–Jun.	Sandy or gravelly soils in coastal scrub (alluvial fans); Mojavean desert scrub; Pinyon and juniper woodland. Elevation range extends from 300-1,200 meters. Found in Los Angeles, Riverside, San Bernardino, San Diego counties.	<b>Low Potential.</b> Marginal suitable coastal scrub habitat is present immediately adjacent to the project area within the study area. Additionally, one known occurrence of the species is present along Mill Creek approximately 4.6 miles southeast of the study area.
slender-horned spineflower <i>Dodecahema leptoceras</i>	Federal: FE State: SE Other: 1B.1	Apr.–Jun.	Scrub and chaparral in sandy soils and alluvial fans. Elevation range extends from 200-760 meters. Found in Los Angeles, Riverside, San Bernardino counties.	<b>High Potential.</b> Suitable California buckwheat – brittle bush scrub habitat and sandy soils are present within the project area. Additionally, known occurrences of the species are present throughout the alluvial fan scrub associated with the Santa Ana River approximately 0.7 mile south of the project area.
<b>Liliaceae (Lily Family)</b>				
Plummer's mariposa lily <i>Calochortus plummerae</i>	Federal: None State: None Other: 4.2	May-Jul.	Chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland, granitic/rocky. Elevation range extends from 100-1,700 meters. Found in Los Angeles, Orange, Riverside, San Bernardino, Ventura counties.	<b>High Potential.</b> Suitable California buckwheat – brittle bush scrub habitat and granitic/rocky soils are present within the project area. Additionally, known occurrences of the species are present within the southern portion of the study area.



Ms. Michelle Morrison  
 March 18, 2024  
 Page 19

Common Name Scientific Name	Sensitivity Status <sup>1</sup>	Flowering Period	Preferred Habitat/Known Elevation and Distribution <sup>2</sup>	Presence/Potential to Occur
<b>Poaceae (True Grass Family)</b>				
California satintail <i>Imperata brevifolia</i>	Federal: None State: None Other: 2B.1	Sep.–May	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub/mesic.  Elevation range extends from 0–1,215 meters.  Found in Kern, Los Angeles, Riverside, San Bernardino, Ventura, Orange counties.	<b>Low Potential.</b> Marginal suitable coastal scrub habitat is present immediately adjacent to the project area within the study area. Additionally, one known occurrence of this species is present within the City of Redlands approximately 1.6 miles south of the study area.

NOTES:

1. Sensitivity Status

Federal/State/Local Status: FE = Federally Endangered; SE = State Endangered; ST = State Threatened; California Rare Plant Rank (CRPR) 1B = rare, threatened, or endangered in California and elsewhere; CRPR 2B = rare, threatened, or endangered in California but common elsewhere; CRPR 4 = plants of limited distribution. Rank 3 and 4 plants listed by the CNPS and CDFW as plants in which more information is needed to determine their status and plants of limited distribution that are not significant locally are excluded from this analysis.

2. Sources for Preferred Habitat: Calflora 2024; CDFW 2023a.

SOURCE: ESA 2024

## Special-Status Wildlife

Special-status wildlife are defined as those that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as imperiled in some way. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status based on adopted policies (e.g., counties and cities) and/or the expertise of state resource agencies or non-profit organizations (e.g., Western Bat Working Group). Special-status wildlife are defined as follows:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.
- Wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380.
- Wildlife designated by CDFW as species of special concern, CDFW Watch List species, or have a state rank of S1-S3 on CDFW’s Special Animals List (CNDDDB 2024).
- Wildlife “fully protected” in California (FGC Sections 3511, 4700, and 5050).
- Bird species protected by the MBTA.
- Bat species considered priority by the Western Bat Working Group (WBWG).

The potential for special-status wildlife species to occur within the study area was assessed according to on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. A review of the CNDDDB (CDFW 2023a) revealed that many special-status wildlife species have been recorded within the USGS quadrangle search area (see Attachment D) containing the study area; however, based on habitat preference, geographic distributions, and/or range restrictions, it was determined that a number of the species do not have the potential to occur due to the lack of suitable habitat, and are therefore omitted from further discussion in this report. Based on the criteria defined below, it is determined that 30 species have a low to high potential to occur within the study area or were observed during the biological assessment or previous studies (see **Table 3, Special-Status Wildlife Species with Potential to Occur**).

**Low Potential:** The study area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent.

**Moderate Potential:** Marginal habitat for a particular species may exist. For example, the habitat may be heavily disturbed and/or may not support all stages of a species' life cycle; or may not fit all preferred habitat characteristics.

**High Potential:** The study area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.

**Present:** The species was observed within the study area during the site assessment.

Two listed species were present during the site assessment or previous studies conducted within the study area: coastal California gnatcatcher (*Poliophtila californica californica*; federally threatened and state species of special concern) and SBKR (federally endangered, state endangered, and state species of special concern). Two non-listed special-status wildlife species were present during the site assessment or previous studies conducted within the study area: coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*) and northwestern San Diego pocket mouse (*Chaetodipus fallax* ssp. *fallax*). The two listed species identified within the study area are depicted in **Figure 5, Sensitive Biological Resources**.

Based on the condition of the vegetation and habitats that were characterized during the site visit, it was determined that 14 non-listed special-status wildlife species, of the 30 species identified by CNDDDB, were determined to have a moderate to high potential to occur, including southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), southern California legless lizard (*Anniella stebbinsi*), California glossy snake (*Arizona elegans occidentalis*), Bell's sparrow (*Artemisiospiza belli belli*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), burrowing owl (*Athene cunicularia*), red-diamond rattlesnake (*Crotalus ruber*), California horned lark (*Eremophila alpestris* ssp. *actia*), loggerhead shrike (*Lanius ludovicianus*), San Diego black-tailed jackrabbit (*Lepus californicus* ssp. *bennettii*), San Diego desert woodrat (*Neotoma lepida* ssp. *intermedia*), southern grasshopper mouse (*Onychomys torridus ramona*), Los Angeles pocket mouse (*Perognathus longimembris* ssp. *brevinasus*), and coast horned lizard (*Phrynosoma blainvillii*). Additional species determined to have a moderate potential to occur include: Crotch bumble bee (*Bombus crotchii*; state candidate endangered) and western spadefoot (*Spea hammondi*; federal candidate as threatened). Wildlife species determined to have a low potential to occur in the study area are not further evaluated in this report beyond Table 3.



Ms. Michelle Morrison  
 March 18, 2024  
 Page 21

**TABLE 3**  
**SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR**

Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
<b>Amphibians</b>			
western spadefoot <i>Spea hammondi</i>	Federal: FCT State: SSC Other: S3S4	Mixed woodland, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Prefers washes and other sandy areas with patches of brush and rocks. Rain pools or shallow temporary pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding. Perennial plants necessary for its major food-termites.	<b>Moderate Potential.</b> Suitable upland habitat, such as grasslands and chaparral, is present throughout the study area. The study area contains constructed basins with seasonal ponding. Additionally, multiple constructed basins are present adjacent to the east of the study area. This species has been previously observed within one mile to the east of the project area.
<b>Birds</b>			
Cooper's hawk <i>Accipiter cooperii</i>	Federal: None State: WL Other: S4	Inhabits cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest, or other forest habitats near water. Nests and forages near open water or in riparian vegetation.	<b>Low Potential (Foraging).</b> The study area contains limited woodland areas to support nesting and roosting, but this species may use the area for foraging. This species has been previously observed within San Timoteo Wash approximately 6.8 miles south of the project area.
southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	Federal: None State: WL Other: S4	Known to frequent relatively steep, often rocky hillsides with grass and forb species. Resident in southern California coastal sage scrub and mixed chaparral habitats.	<b>Moderate Potential.</b> Suitable habitat is present throughout the annual grasses and forbs and coastal sage scrub habitats; however, no sloped, rocky habitat is present within the study area. The nearest known occurrence is located in the San Bernardino Mountains and Yucaipa approximately 5.5 miles north and south of the project area, respectively.
golden eagle <i>Aquila chrysaetos</i>	Federal: BGEPA State: FP, WL Other: S3	Known to live in open and semi-open country featuring native vegetation across most of the Northern Hemisphere. They avoid developed areas and uninterrupted stretches of forest. They are found primarily in mountains up to 12,000 feet, Canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest on cliffs and steep escarpments in grassland, chaparral, shrubland, forest, and other vegetated areas. Forages for mammalian prey in grasslands, coastal sage scrub, chaparral, oak savannahs, open coniferous forest, and over open areas	<b>Low Potential (Foraging).</b> Suitable foraging habitat is present in the coastal sage scrub and open areas within the study area. However, the study area lacks steep cliffs suitable for nesting. This species has been previously observed within San Timoteo Canyon approximately 9.2 miles southeast of the project area.



Ms. Michelle Morrison  
 March 18, 2024  
 Page 22

Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
Bell's sparrow <i>Artemisiospiza belli belli</i>	Federal: None State: WL Other: S3	Inhabits large, unfragmented blocks of coastal sage scrub, southern mixed chaparral habitats.	<b>Moderate Potential.</b> Suitable large, unfragmented blocks of coastal scrub and chaparral vegetation are present within the study area; however, this species was previously observed 10.3 miles southwest of the project area within Moreno Valley.
burrowing owl <i>Athene cunicularia</i>	Federal: BCC State: SSC Other: S2	Various open habitat types including grasslands and low scrub communities and is known to utilize heavily disturbed areas for roosting and nesting purposes.	<b>Moderate Potential.</b> Suitable foraging and nesting habitat is present throughout the annual grasses and forbs and scrub habitats within the study area. Limited suitable burrows were observed within the study area outside of the project site. This species has been previously observed within San Bernardino International Airport approximately 4.1 miles west of the project area.
white-tailed kite <i>Elanus leucurus</i>	Federal: None State: FP Other: S3S4	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	<b>Low Potential (Foraging).</b> There is suitable foraging habitat throughout the coastal scrub habitat within the study area. However, this species is unlikely to nest within the study area due to lack of marsh and woodland habitats.
California horned lark <i>Eremophila alpestris actia</i>	Federal: None State: WL Other: S4	Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above the treeline. During the winter, this species typically flocks in desert lowlands.	<b>Moderate Potential.</b> Marginal suitable grassland habitat is present within the study area. This species has been previously observed within an industrial part of the city of Redlands approximately 5.8 miles southwest of the project area.
merlin <i>Falco columbarius</i>	Federal: None State: WL Other: S3S4	Occupies seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms, and ranches. Clumps of trees or windbreaks are required for roosting in open country.	<b>Low Potential (Foraging).</b> Suitable open grasslands surrounding residential areas may support foraging within the study area. However, the site lacks clumps of trees that are suitable for roosting.
loggerhead shrike <i>Lanius ludovicianus</i>	Federal: None State: SSC Other: S4	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	<b>High Potential.</b> Suitable open scrub habitat for foraging with dense shrubs and bushes required for nesting is present within the study area. This species has been previously observed within San Timoteo Canyon approximately 9.2 miles southeast of the project area.



Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
coastal California gnatcatcher <i>Polioptila californica californica</i>	Federal: FT State: SSC Other: S2	Species is an obligate, permanent resident of coastal sage scrub habitats dominated by California sagebrush and flat-topped buckwheat, mainly on cismontane slopes below 1,500 feet in elevation. Low coastal sage scrub in arid washes, on mesas and slopes.	<b>Present.</b> Suitable coastal sage scrub habitat with California buckwheat is present within and surrounding the project area. An individual was visually and audibly identified within the study area during the biological field reconnaissance, approximately 0.2 miles south of the project area.
<b>Mammals</b>			
pallid bat <i>Antrozous pallidus</i>	Federal: None State: SSC Other: S3	Occurs in a wide variety of habitats including chaparral, coastal scrub, desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran Desert scrub, upper montane coniferous forest, valley and foothill grasslands. Most common in open, dry habitats with rocky areas for roosting. For roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging. Roosts must protect species from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Low Potential (Foraging).</b> Marginal foraging habitat is present within the coastal sage scrub communities present within the study area; however, rocky areas and/or various infrastructure necessary for roosting is not available.
northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	Federal: None State: None Other: S3S4	Moderate canopy coverage of coastal scrub, sagebrush, chaparral, grasslands, pinyon-juniper, and desert wash and scrub. Found in sandy, herbaceous areas with nearby shrubs for cover. Burrows are typically dug within gravelly or sandy soil.	<b>Present.</b> Suitable habitat is present throughout the scrub habitat with herbaceous areas and accompanying shrubs. This species was present during small-mammal trapping in 2022 (ECORP 2022).
San Bernadino kangaroo rat <i>Dipodomys merriami parvus</i>	Federal: FE State: SSC, SE Other: S1	Inhabits coastal sage scrub vegetation in alluvial fans and floodplains.	<b>Present.</b> Suitable habitat is present throughout the coastal scrub with burrow surveys and nighttime activity surveys suggesting presence of species (ESA 2023). Additionally, this species was present during small-mammal trapping in 2022 (ECORP 2022).
Stephen's kangaroo bat <i>Dipodomys stephensi</i>	Federal: FT State: ST Other: S3	Inhabits annual and perennial grassland habitats, but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas. Known to occur in sparse perennial vegetation with firm soil, "neither hard nor sandy."	<b>Low Potential.</b> Suitable habitat is present throughout the annual grasses and forbs and coastal scrub habitats within the study area; however, appropriate soils are not present. Additionally, the species is considered extirpated in Redlands quad.
western mastiff bat <i>Eumops perotis californicus</i>	Federal: None State: SSC Other: S3S4	Known to occur in habitat consisting of extensive open areas within dry desert washes, flood plains, chaparral, cismontane oak woodland, coastal scrub, open ponderosa pine forest, and grasslands. Roosts primarily in crevices in rock outcrops and buildings.	<b>Low Potential (Foraging).</b> This species may forage throughout the study area; however, rock outcrops are not available for roosting and limited infrastructure is available within and surrounding the project area.





Ms. Michelle Morrison  
 March 18, 2024  
 Page 24

Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
western yellow bat <i>Lasiurus xanthinus</i>	Federal: None State: SSC Other: S3	Known only in Los Angeles and San Bernardino Counties south to the Mexican border. This species has been recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts primarily in trees, including under palm trees, and forages for insects over water and among trees.	<b>Low Potential (Foraging).</b> This species may forage throughout the study area; however, limited trees are available for roosting within and surrounding the project area.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	Federal: None State: None Other: S3S4	Inhabits open grasslands, agricultural fields, and sparse coastal scrub where they occur primarily in arid regions with short grass.	<b>High Potential.</b> This species has a high likelihood of occurring within the study area due to suitable coastal scrub habitat with short grasses present.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	Federal: None State: SSC Other: S3S4	Found in a variety of coastal scrub, desert scrub, chaparral, cactus, and rocky habitats. Nests primarily against rock outcroppings, boulders, cacti, or areas of dense undergrowth.	<b>High Potential.</b> Suitable coastal scrub and chaparral habitat is available within the study area; rock outcrops from berm construction are present for nest building. This species has been observed approximately 1.16 miles east of the project area.
pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	Federal: None State: SSC Other: S3	Inhabits pinyon-juniper woodlands, riparian scrub, Sonoran desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis. Typically roosts in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying over bodies of water or arid desert habitats to capture prey.	<b>Low Potential (Foraging).</b> This species may forage throughout the Santa Ana River floodplain, but the study area lacks suitable caves and rocky outcrops for roosting.
southern grasshopper mouse <i>Onychomys torridus ramona</i>	Federal: None State: SSC Other: S3	Alkali desert scrub and desert scrub habitats are preferred, with somewhat lower densities expected in other desert habitats, including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Uncommon in valley foothill and montane riparian, and in a variety of other habitats.	<b>High Potential.</b> Suitable coastal scrub and chaparral habitat is present throughout much of the study area. This species has been observed within Loma Linda approximately 8.8 miles southwest of the project area.
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	Federal: None State: SSC Other: S1S2	Found in lower elevation grasslands and coastal sage scrub communities.	<b>High Potential.</b> Suitable habitat is present throughout the annual grasses and forbs and coastal scrub habitats within the study area. Additionally, suitable burrows were observed within the western portion of the project area. This species has been observed within the Santa Ana River floodplain approximately 3.9 miles west of the project area.

Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
American badger <i>Taxidea taxus</i>	Federal: None State: SSC Other: S3	Found in a variety of habitats, including alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojavean desert scrub, riparian scrub, riparian woodland, valley and foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground to dig burrows. Preys on burrowing rodents.	<b>Low Potential.</b> Suitable habitat and evidence of an available prey base (i.e., gophers, ground squirrels, kangaroo rats, and deer mice) are present throughout the annual grasses and forbs; however, no suitable burrows (i.e., appropriately-sized) were observed.
<b>Reptiles</b>			
southern California legless lizard <i>Anniella stebbinsi</i>	Federal: None State: SSC Other: S3	Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach/coastal dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Can also be found by gently raking leaf litter under bushes and trees. Sometimes found in suburban gardens in Southern California.	<b>High Potential.</b> Suitable habitat for this species is present throughout the sparsely vegetated chaparral habitat present within the study area. The species was observed along adjacent to the south of Greenspot Road approximately 0.7 mile east and 1.7 miles west of the project area.
California glossy snake <i>Arizona elegans occidentalis</i>	Federal: None State: SSC Other: S2	Inhabits arid scrub, rocky washes, and grasslands, and chaparral habitats. Appears to prefer microhabitats of open areas with friable soils for burrowing.	<b>High Potential.</b> Appropriate vegetation is present throughout the annual grasses and forbs, scrub, and chaparral habitats. Multiple known occurrences of this species are present within one mile east and west of the project area.
Belding's orange- throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	Federal: None State: WL Other: S2S3	Species requires intact habitat within chaparral, cismontane woodland, and coastal scrub plant communities. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites.	<b>Moderate Potential.</b> Appropriate vegetation is available throughout the chaparral and coastal scrub habitats that contain sandy areas with brush and rocks. This species has been observed within the city of Mentone approximately 3.6 miles southeast of the project area.
coastal western whiptail <i>Aspidoscelis tigris</i> ssp. <i>stejnegeri</i>	Federal: None State: SSC Other: S3	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	<b>Present.</b> Suitable habitat is present within the open area throughout the study area. Additionally, this species was observed during nighttime small mammal activity surveys (ESA 2023).



Ms. Michelle Morrison  
 March 18, 2024  
 Page 26

Common Name Scientific Name	Status <sup>1</sup> (Federal/State/ Other)	Preferred Habitat <sup>2</sup>	Presence/Potential to Occur within the Study Area
red-diamond rattlesnake <i>Crotalus ruber</i>	Federal: None State: SSC Other: S3	Known to occur in chaparral, Mojavean desert scrub, and Sonoran Desert scrub communities. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects.	<b>High Potential.</b> Appropriate vegetation is present within the chaparral habitat. There are ample rocky areas with dense vegetation and presence of prey species. This species has been observed 0.3-mile northwest of the project area along Greenspot Road.
coast horned lizard <i>Phrynosoma blainvillii</i>	Federal: None State: SSC Other: S4	Prefers sandy riparian and sage scrub habitats but also occurs in valley-foothill hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, flood plains, and windblown deposits. Requires open areas for sunning, bushes and loose soil for cover and abundant supply of harvester ants.	<b>High Potential.</b> Suitable scrub and annual grass/forb habitat with sandy deposits is present within the project area. This species has been observed 1.3 miles east of the project area.
<b>Invertebrates</b>			
Crotch bumble bee <i>Bombus crotchii</i>	Federal: None State: SCE Other: S2	Open grassland and scrub habitats that support potential nectar sources such as plants within the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae families.	<b>Moderate Potential.</b> The annual grasses and forbs and coastal scrub habitats support potential nectar sources for the species, especially plants within the Asteraceae and Boraginaceae families. This species has been observed within Loma Linda approximately 6.9 miles southwest of the project area.

NOTES:

1. Sensitivity Status

Federal/State/Local Status: FE = Federally Endangered; FT = Federally Threatened; FCT = Federal Candidate as Threatened; BCC = Federal Bird of Conservation Concern; SCE = State Candidate as Endangered; SE = State Endangered; ST = State Threatened; SSC = State Species of Special Concern; FP = Fully Protected; WL = State Watch List

The California Natural Diversity Database (CNDDB) uses the same ranking methodology originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. The state rank (S-rank) refers to the imperilment status only within California's state boundaries. It is a reflection of the overall status of an element through its state range. The state rank represents a letter + number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.

S1 = Critically Imperiled – At very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

S2 = Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

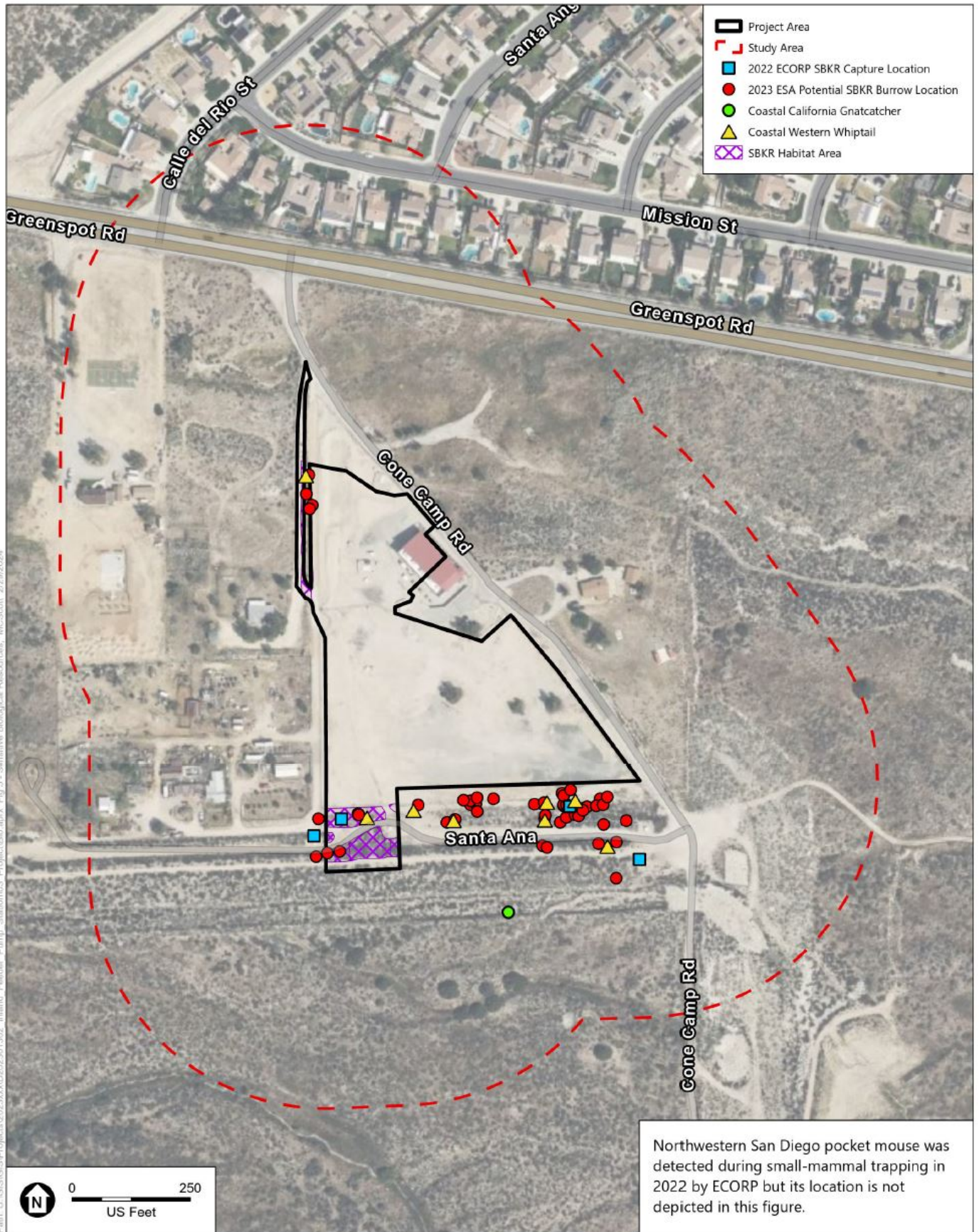
S3 = Vulnerable – At moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

S4 = Apparently Secure – At a fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

2. Sources for Preferred Habitat: CDFW 2023a; Cornell Lab of Ornithology 2024.

SOURCE: ESA 2024





SOURCE: ESA, 2023b; ECORP, 2022

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 5**  
Sensitive Biological Resources



Ms. Michelle Morrison  
March 18, 2024  
Page 28

## Critical Habitat

Under the FESA, to the extent feasible, the USFWS and National Marine Fisheries Service (NMFS) are required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter that are essential to the survival and recovery of the species, whether the habitat is currently occupied by the species or not. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types.

The entire project area and the majority of the study area aside from the residential development to the north is located within designated Critical Habitat Unit 1 (Santa Ana River Wash) for San Bernardino kangaroo rat (USFWS 2023a, 2008). Critical habitat designations are identified based on habitat areas that provide essential life cycle needs of the species (i.e., areas on which the primary constituent elements or PCEs are found) that include, but are not limited to: (1) space for individual and population growth and behavior; (2) essential resources such as food, water, air, light, minerals, or other nutrition or physiological requirements; (3) cover or shelter; (4) breeding and rearing sites; (5) representative habitats that are protected and represent the historical, geographical, and ecological range of the subspecies.

Specific PCEs required for SBKR include: alluvial fans, washes, and floodplains with suitable soils (i.e., sand, loamy sand, sandy loam, and loam) and burrows for cover and shelter; upland areas adjacent to alluvial fans, washes, and associated floodplain areas that support alluvial sage scrub and/or associated vegetation (i.e., coastal sage scrub and chamise chaparral) with up to approximately 50% canopy cover for protection from predators; and upland areas adjacent to alluvial fans, washes, and associated floodplain areas that include marginal habitat (e.g., alluvial sage scrub with greater than 50% canopy cover) with patches of suitable soils. The brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and disturbed chamise chaparral – hairy yerba santa scrub habitats within the project area and remainder of the study area provide suitable habitat for SBKR.

## Wildlife Movement

Migration corridors are navigable pockets or strips of land that connect larger tracts of open space together, allowing them to function as a greater habitat complex. These “passages” can exist on a small scale, allowing wildlife to pass through or under an otherwise uninhabitable area including a roadway, housing development, or city through drainage culverts, green belts and waterways; or on a larger scale, providing an opportunity for wildlife to skirt large topographical features (e.g., mountains, lakes, streams) by utilizing adjacent canyons, valleys and upland swaths when migrating.

Ms. Michelle Morrison  
March 18, 2024  
Page 29

Chain-link fencing is present along the perimeter of the majority of the developed portion of the project area which blocks access to the project area. Rural residential development also surrounds the project area to the north, east, and west, likely deterring wildlife movement. The land surrounding the project area to the south is undeveloped land that wildlife likely utilizes to forage and breed, and to some extent, travel locally and regionally. Numerous species of birds, reptiles, invertebrates, and small mammals would be expected in the study area, as well as larger mammals such as the coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*) and grey fox (*Urocyon cinereoargenteus*), who likely utilize the area for hunting and movement. While the project area provides some refuge for wildlife, it does not provide linkages to other habitats and is not expected to function as an important migration corridor. The project area and study area do not overlap with designated or recognized wildlife corridors.

## Aquatic Resources

A formal aquatic resources delineation was not conducted as part of the biological field reconnaissance. However, five aquatic resource features (Features 1-5) were identified within the study area (**Figure 6, Aquatic Resources**). One constructed basin with associated drainage is located in the project area, while three ephemeral drainages and one constructed drainage are located outside the project area, within the surrounding study area.

### Feature 1: Constructed Basin

Feature 1 is a constructed basin located within the northwestern extent of the project area. This feature is unvegetated and created within an upland area. An existing access road crosses Metropolitan's fee parcel from a gate on the southern fence line to a gate along the western fence line. This road, which crosses the parcel from south to north, appears to capture surface water runoff flowing from the existing access road and likely functions as an unintended stormwater pathway due to its regular use. As a result, concentrated stormwater flows along the road ultimately drain northward into the constructed basin located on the northwestern extent of the project area.

### Feature 2: Ephemeral Drainage

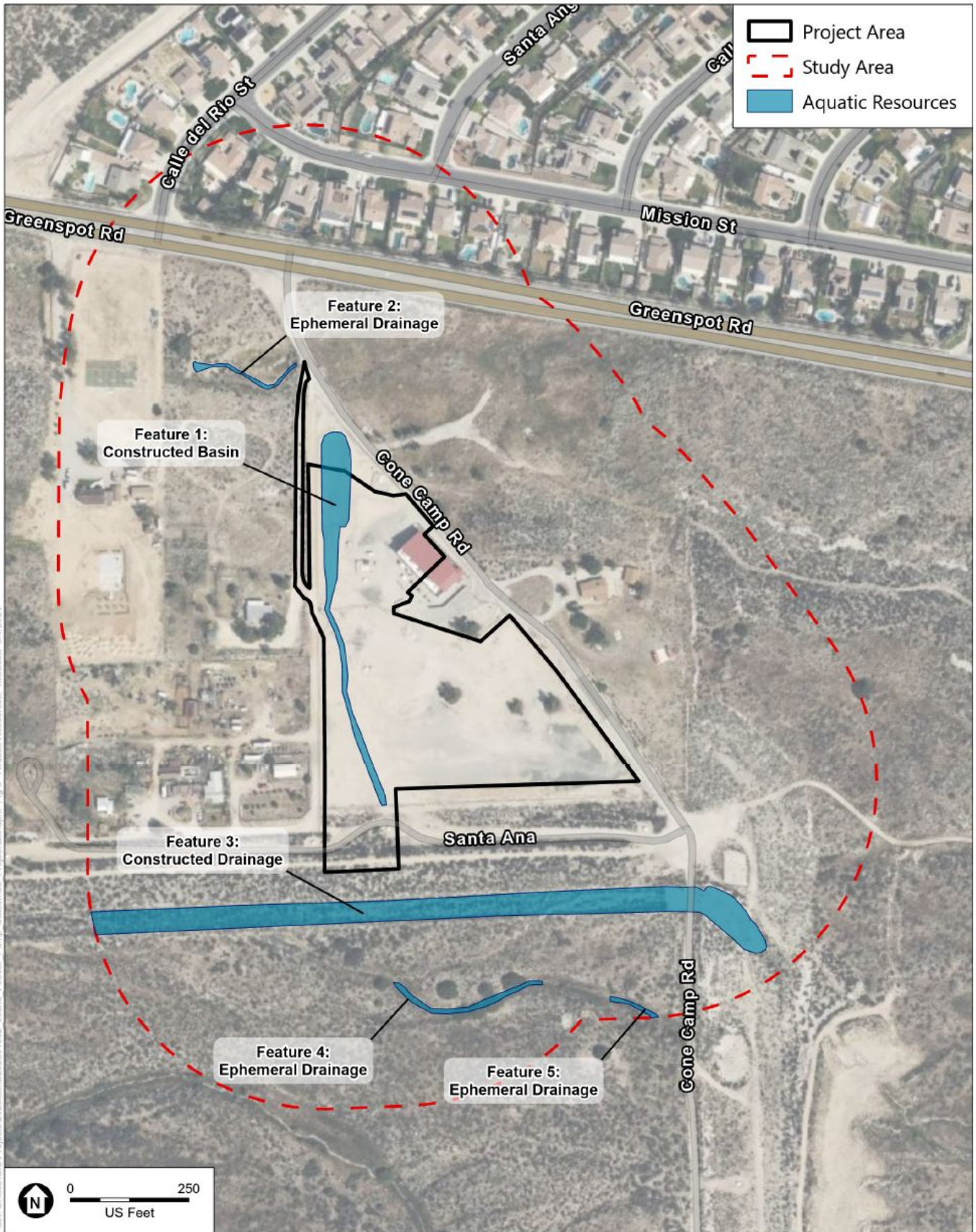
Feature 2 is an ephemeral drainage located within the northern portion of the study area just west of the northernmost corner of the project area, and is dominated by upland vegetation (California buckwheat – brittle bush scrub). This drainage receives and captures surface water runoff from the surrounding landscape, including

Cone Camp Road, and flows to the west for approximately 245 feet before dissipating into the ground. The existing topography, specifically the higher elevation of the adjoining property, acts as a natural barrier preventing the flow from continuing or connecting with any other aquatic features downstream.

### Feature 3: Constructed Drainage

Feature 3 is a constructed drainage within the southern portion of the study area, outside of the project area, north of Features 4 and 5. It is dominated by upland vegetation, including California buckwheat – brittle bush scrub, in addition to one individual sandbar willow (*Salix exigua*) and sparse mulefat (*Baccharis salicifolia*) within the





SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 6**  
Aquatic Resources

eastern portion of the drainage. This drainage appears to have been constructed in an upland area and receives flows through a culvert located at the easternmost end of the feature. During high flows, water travels east to west through the constructed drainage, and converging with Plunge Creek, which ultimately connects to the Santa Ana River further west and outside of the study area.

### **Feature 4: Ephemeral Drainage**

Feature 4 is an ephemeral drainage located within the southern portion of the study area and outside of the project area. This ephemeral drainage is comprised of upland vegetation, specifically chamise chaparral-hairy yerba santa scrub. Feature 4 dissipates into the ground at its western extent and does not appear to connect with any other aquatic features at its downstream extent.

### **Feature 5: Ephemeral Drainage**

Feature 5 is an ephemeral drainage located within the southern portion of the study area and outside of the project area. It contains upland vegetation, specifically hairy yerba santa scrub. Based on aerial review, Features 4 and 5 appear to have once formed a single, ephemeral aquatic feature. However, recent disturbances in the area have caused a separation, severing the connection between them. Consequently, due to the surrounding higher elevation, drainage from this feature dissipates into the ground at its western extent.

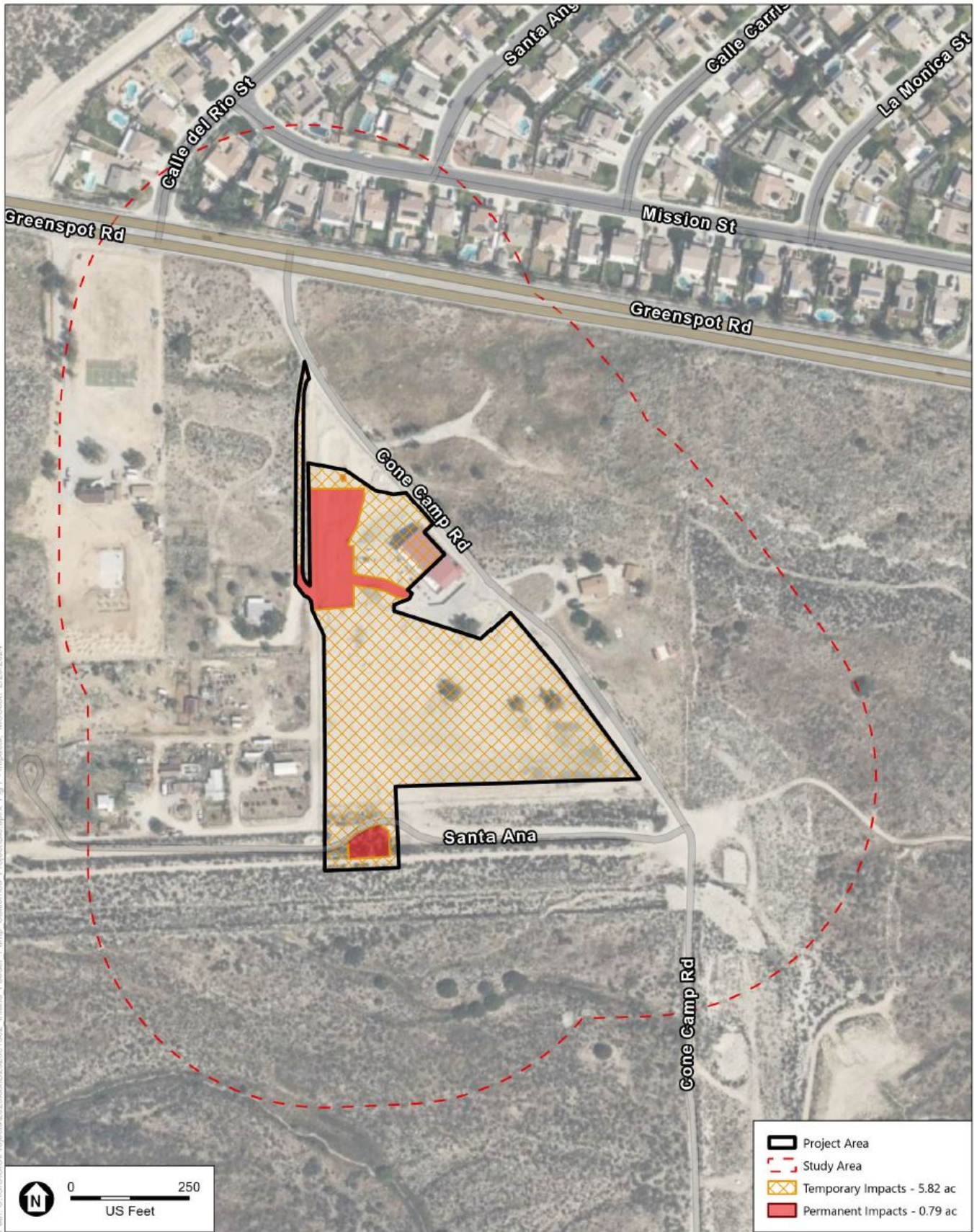
## **Conclusions and Potential Impacts**

The project is proposing to install two new underground pipelines (supply connection and discharge connection), two underground vaults, four aboveground HSTs, and associated appurtenant structures which would be updated in two stages. Stage 1 includes construction of the supply and discharge pipelines, an underground vault, four HSTs on concrete pads, and appurtenant structures within the existing graded triangular fenced area and the area immediately west of the fenced area. Stage 2 includes construction of a vault, portion of the discharge connection pipeline, associated appurtenant structures, and final connections to the existing Inland Feeder pipeline within the southern portion outside of the existing fenced area. The proposed project would result in 0.79 acres of permanent impacts and 5.82 acres of temporary impacts to developed and disturbed land cover and California buckwheat – brittle bush scrub natural community (**Figure 7, Project Impact Areas**).

## **Sensitive Natural Communities**

Direct permanent and temporary impacts to natural communities and land covers within the proposed project development footprint are summarized in **Table 4, Project Impacts to Natural Communities and Land Cover Types**, and shown in Figure 7. Direct impacts to natural communities and land covers are proposed as a result of vegetation removal and construction activities and were quantified by overlaying the project boundaries with the vegetation communities mapped in the study area. The majority of the direct impacts would occur primarily within developed (5.84 acres) and disturbed (0.40 acres) areas. The only natural community within the project area is California buckwheat – brittle bush scrub natural community, which is not considered a sensitive natural





Path: \\U:\GIS\Projects\2023\Inland Feeder Pump Station\03 Project\BIO.aprx Fig 7 - Impacts, MCS\01 2/28/2024

SOURCE: ESA, 2024

Inland Feeder - Foothill Pump Station Intertie Project

**Figure 7**  
Project Impact Areas

**TABLE 4**  
**PROJECT IMPACTS TO NATURAL COMMUNITIES AND LAND COVER TYPES**

Natural Community/Land Cover Type	Permanent Project Impact (acres)	Temporary Project Impact (acres)	Total Project Impact (acres)	Remaining Acreage in the Study Area (acres)
<b>Terrestrial Natural Communities</b>				
Annual Grasses and Forbs	--	--	--	1.66
Brittle Bush Scrub	--	--	--	2.79
Disturbed Brittle Bush Scrub	--	--	--	2.70
California Buckwheat – Brittle Bush Scrub	0.12	0.25	0.37	12.18
Disturbed California Buckwheat – Brittle Bush Scrub	--	--	--	1.40
Chamise Chaparral – Hairy Yerba Santa Scrub	--	--	--	0.57
Disturbed Chamise Chaparral – Brittle Bush Scrub	--	--	--	0.55
Hairy Yerba Santa Scrub	--	--	--	5.37
Mustard Fields	--	--	--	1.19
<b>Developed/Disturbed Land Cover Types</b>				
Developed	0.54	5.30	5.84	18.67
Disturbed	0.13	0.27	0.40	6.27
<b>TOTAL</b>	<b>0.79</b>	<b>5.82</b>	<b>6.61</b>	<b>53.35</b>

SOURCE: ESA 2024

community. Only 0.37 acre of California buckwheat – brittle bush scrub natural community is proposed to be permanently (0.12 acre) or temporarily (0.25 acre) impacted by the proposed project activities. No sensitive natural communities occur within the study area (CDFW 2023b).

## Federally and State Listed Species

Appropriate authorization from USFWS under FESA or CDFW under CESA may include an Incidental Take Permit (ITP) or a Consistency Determination in certain circumstances, among other options (FGC, §§ 2080.1, 2081, subs. [b] and [c]) for impacts to federally and state listed species. Early consultation is encouraged, as significant modification to the project and mitigation measures may be required to obtain an ITP.

## Special-Status Plants

Five special-status plant species have a moderate to high potential to occur within the California buckwheat – brittle bush scrub habitat within the project area, as well as within the natural communities within the surrounding study area: Parry’s spineflower, Plummer’s mariposa lily, Robinson’s pepper-grass, Santa Ana River woollystar, and slender-horned spineflower. While these five special-status plants have the potential to occur within the



Ms. Michelle Morrison  
March 18, 2024  
Page 34

coastal sage scrub and chaparral habitats mapped in the study area (i.e., brittle bush scrub, disturbed brittle bush scrub, California buckwheat – brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub), Plummer’s mariposa lily also has the potential to occur within the annual grasses and forbs habitat mapped in the study area.

The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Focused rare plant surveys are recommended to confirm presence or absence of these species within 50 feet of the project area wherever suitable habitat occurs. Direct impacts to these species may occur in the form of habitat loss and mortality if the individual plants are present and crushed or removed during ground disturbing activities. Indirect impacts may occur in the form of excessive dust and introduction of nonnative plant species. Although these species may be present in the project area, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of these species with the implementation of **Standard Metropolitan Practices (SMP)-1, SMP-2, and SMP-3**, as well as **Avoidance and Minimization Measures (AMM)-1 and AMM-2**, and **Mitigation Measure BIO-1** listed below.

## Special-Status Wildlife

### ***Coastal California Gnatcatcher, Crotch Bumble Bee, Western Spadefoot, San Bernardino Kangaroo Rat***

Coastal California gnatcatcher may forage and nest within the California buckwheat – brittle bush scrub habitat present within the project area and remainder of the study area. Additionally, the species may use the brittle bush scrub, disturbed brittle bush scrub, disturbed California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and disturbed chamise chaparral – brittle bush scrub, and hairy yerba santa scrub habitat for nesting and foraging within the remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Ground disturbance and vegetation clearing activities during nesting season may result in “take” of this species through the disruption of breeding/nesting behavior, such as copulation, nest building or incubation. Although this species is known to occur in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of coastal California gnatcatcher with implementation of **SMP-1, AMM-1, AMM-3, and Mitigation Measure BIO-1**.

Crotch bumble bee may forage and/or nest within the California buckwheat – brittle bush scrub habitat in the project area and remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Additionally, this species may use all of the natural communities, aside from the disturbed and developed land cover types, for nesting and foraging within the remainder of the study area. Ground disturbance and vegetation clearing activities may result in direct and indirect impacts to this species through the removal of the species’ preferred plants for nectaring and removal of nest burrows. Although this species has a potential to occur





Ms. Michelle Morrison  
March 18, 2024  
Page 35

in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of Crotch bumble bee with the implementation of Metropolitan's Standard Practices as outlined in **SMP-1** and **SMP-2**. In addition, **AMM-1** and **AMM-4** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect Crotch bumble bee.

Western spadefoot may use small mammal burrows within the California buckwheat – brittle bush scrub present within the project area and remainder of the study area. The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. Additionally, this species may use all of the natural communities, aside from the disturbed and developed land cover types, for estivating and foraging within the remainder of the study area. The species is not expected to use the project area for breeding since it is disturbed and there are limited suitable breeding pools present. Although this species has a potential to occur in the project vicinity, the project would not be expected to result in the loss of individuals or adversely affect local or regional populations of western spadefoot with the implementation of Metropolitan's Standard Practices as outlined in **SMP-1**, **SMP-2**, and **SMP-3**, as well as avoidance and minimization measures **AMM-1** and **AMM-5**.

San Bernardino kangaroo rats may burrow, forage, and breed within the California buckwheat – brittle bush scrub habitat within the project area and remainder of the study area. This species was present during small-mammal trapping surveys conducted in 2022 (ECORP 2022). The project would result in the permanent removal of 0.12 acre and temporary removal of 0.25 acre of California buckwheat – brittle bush scrub habitat present within the project area. The proposed project may result in a direct impact to this species through the killing of an individual(s) or the removal of a nest or burrows or may indirectly prevent normal breeding and/or foraging through noise generation from project activities. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, artificial lighting and increased predation. Implementation of Metropolitan's Standard Practices outlined in **SMP-1**, **SMP-2**, and **SMP-4**. In addition, **AMM-1**, **AMM-6**, **AMM-7**, **AMM-8**, and **Mitigation Measure BIO-1** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect local or regional populations of SBKR.

## **Other Special-Status Wildlife**

The Bell's sparrow, burrowing owl, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow may forage and/or breed within the annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover type, of the project area and remainder of the study area. However, the project area is heavily compacted and provides very limited suitable foraging habitat along its southern boundary. Additionally, there is ample, suitable foraging habitat present in the surrounding area. Thus, the permanent loss of up to 0.12 acre and temporary loss of up to 0.25 acre of potentially suitable foraging habitat due to the proposed project activities is not considered a likely adverse impact to Bell's sparrow, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow if present during construction. Implementation of



Ms. Michelle Morrison  
March 18, 2024  
Page 36

standard measures such as limiting the area of disturbance would further contribute toward avoiding any potential impacts to foraging species and their habitat.

The study area provides suitable nesting habitat for a variety of native resident and migratory bird and raptor species (including Bell's sparrow, burrowing owl, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow) protected under the MBTA and CFGC Sections 3503.5, 3505, and 3511. The project may result in the direct and/or indirect impacts to these migratory bird and raptor species through the removal of active nests or disruption of breeding/nesting behavior such as copulation, nest building, or incubation if present during construction activities. Metropolitan would implement their Standard Metropolitan Practices as outlined in **SMP-1**. In addition, implementation of **AMM-1**, **AMM-3**, and **AMM-10** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect protected nesting birds or raptors.

The Belding's orange-throated whiptail, burrowing owl, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern California legless lizard, and southern grasshopper mouse may occupy annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and/or hairy yerba santa scrub habitats, as well as the disturbed land cover type, of the project area and remainder of the study area. The proposed project may result in a direct impact to these species through the killing of an individual or the removal of a nest or burrow. Indirect impacts may result from human presence, ground vibration and noise generated by heavy equipment, and increased predation. Implementation of Metropolitan's Standard Practices outlined in **SMP-1**, **SMP-2**, and **SMP-4**, as well as avoidance and minimization measures **AMM-1**, **AMM-9**, and **AMM-10** would reduce the potential for direct and indirect impacts; therefore, the project is not likely to adversely affect these special-status ground dwelling species.

## Critical Habitat

Critical habitat for SBKR is located within the study area, and the project would result in the permanent removal of 0.12 acre of designated critical habitat associated with California buckwheat – brittle bush scrub and 0.25 acre of temporary impacts to critical habitat from construction activities. The project would not be expected to result in the adverse modification of critical habitat for SBKR with the implementation of Metropolitan's Standard Practices outlined in **SMP-1** and **SMP-2**, and the implementation of measures **AMM-1**, **AMM-6**, **AMM-7**, **AMM-8**, and **Recommended Measure BIO-1**.

## Wildlife Movement

While wildlife likely uses the study area to forage, breed, and to some extent, for local and regional movement, the project area does not link large areas of contiguous, intact habitat together, and is not expected to function as an important migration corridor. The proposed project may result in both direct and indirect impacts to nesting





Ms. Michelle Morrison  
March 18, 2024  
Page 37

migratory and special-status birds and small mammals that may utilize the study area for foraging and/or nesting. Ground disturbance and vegetation clearing activities may disrupt foraging and breeding/nesting behavior, such as copulation, nest building or incubation, or result in the removal of an active nest or burrow. The project would not be expected to adversely impact the movement of wildlife with the implementation of Metropolitan's Standard Practices outlined in **SMP-1** through **SMP-4**, and measures **AMM-1**, **AMM-3** through **AMM-10**, and **Recommended Measure BIO-1**.

## Aquatic Resources

Feature 1 consists of a constructed basin and an associated drainage feature/road which captures stormwater runoff along an existing access road. Feature 1 is the only aquatic resource identified within the project area. The basin was constructed in an upland area within the northwestern portion of the project area to capture surface water runoff allowing it to infiltrate into the ground within the basin. Feature 1 is less than one acre in size and is used and maintained for the detention, retention, and infiltration of stormwater runoff. This feature does not meet the definition of a water of the state and does not contain or support wetland or riparian habitat, and therefore, would likely not be considered jurisdictional by the CDFW and RWQCB.

Although Feature 3 (the constructed drainage located south of the project area) has a continuous surface connection to the Santa Ana River, a non-wetland water of the U.S., it is an ephemeral feature that does not meet the relatively permanent standard; thus, is likely not considered a water of the U.S. The remaining ephemeral drainage features within the surrounding study area (Features 2, 4, and 5) have no continuous surface connection to waters of the U.S.; therefore, do not meet the definition of a non-wetland water of the U.S. While Features 2 through 5 are located outside the project area and do not support riparian habitat, they may still be regulated by the CDFW and RWQCB. However, the proposed project has no planned impacts to these features as they are situated outside of the project area.

## Standard Metropolitan Practices and Recommended Avoidance, Minimization, and Recommended Measures

The following lists standard Metropolitan practices and recommended avoidance, minimization, and mitigation measures to avoid, minimize, and/or mitigate the project's effects on biological resources.

### Standard Metropolitan Practices

#### Standard Metropolitan Practice (SMP)-1: General Avoidance and Minimization Measures

- **Permits.** The Contractor shall obtain necessary local, state, and federal environmental permits and shall comply with the requirements of all such permits and laws, regulations, acts, codes, and ordinances.



Ms. Michelle Morrison  
March 18, 2024  
Page 38

- **Construction Boundaries.** The Contractor shall perform all construction activities only within the construction boundaries shown on the drawings. The construction boundaries shall be fenced, unless otherwise directed by the Engineer. Any request to use any area outside the construction boundaries for any activity will require review and approval by the Engineer.
- **Worker Environmental Awareness Protections Training.** Metropolitan routinely conducts pre-construction Worker Environmental Awareness Protections Training (WEAP) for both capital projects and operations and maintenance activities. WEAP trainings are project-specific and cover potential environmental concerns or considerations including, but not limited to, awareness of biological resources, special status species near project sites, jurisdictional waters, cultural resources, paleontological resources, environmentally sensitive areas, and/or avoidance areas.
- **Environmental Assessment.** As an internal practice, Metropolitan conducts Environmental Assessments or similar studies prior to project commencement to determine if any sensitive resources have the potential to be present at a project site. Resources assessed typically include biological, cultural, paleontological resources, noise sensitivity, and sensitive receptors in the vicinity of the project area.

## **SMP-2: Hazardous Materials**

- The Contractor shall clean up all spills in accordance with all applicable environmental laws and regulations and notify the Engineer immediately in the event of a spill.
- Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans.
- The Contractor shall handle, store, apply, and dispose of chemicals and/or herbicides consistent with all applicable federal, state and local regulations.
- The Contractor shall dispose of all contaminated materials in a manner consistent with all applicable local, state and federal environmental laws and regulations.
- Hazardous materials shall be stored in covered, leak-proof containers when not in use, away from storm drains and heavy traffic areas, and shall be protected from rainfall infiltration. Hazardous materials shall be stored separately from non-hazardous materials on a surface that prevents spills from permeating the ground surface, and in an area secure from unauthorized entry at all times. Incompatible materials shall be stored separately from each other.

## **SMP-3: Hydrology and Water Quality**

- The Contractor shall not allow any equipment or vehicle storage within any drainage course or channels.
- Any material placed in areas where it could be washed into a drainage course or channel shall be removed prior to the rainy season.



Ms. Michelle Morrison  
March 18, 2024  
Page 39

- The Contractor shall not create a nuisance or pollution as defined in the California Water Code. The Contractor shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Quality Control Board or the SWRCB, as required by the Clean Water Act (CWA).
- Dewatering activities shall not affect any vegetation outside of the construction limits. The Contractor shall submit proposed dewatering plans to the Engineer for approval prior to any dewatering activities.

#### **SMP-4: Lighting**

- The Contractor shall exercise special care to direct floodlights to shine downward. These floodlights shall also be shielded to avoid a nuisance to the surrounding areas. No lighting shall include a residence or native area in its direct beam. The Contractor shall correct lighting nuisance whenever it occurs.

### **Recommended Avoidance and Minimization Measures**

#### **Avoidance and Minimization Measure (AMM)-1: Best Management Practices**

- **Prevention of Inadvertent Entrapment.** To prevent inadvertent entrapment of common and special-status wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep will be covered with tarp, plywood or similar materials at the close of each working day and will be inspected visually to confirm animals would be excluded, to prevent animals from being trapped. Ramps may be constructed of earth fill or wooden planks within deep walled trenches to allow animals to escape, if necessary. Before such holes or trenches are backfilled, they should be thoroughly inspected for trapped animals. If trapped wildlife is observed, escape ramps or structures will be installed immediately to allow escape.
- **Construction Contractor Specifications.** AMM-1 through AMM-9 will be incorporated into the construction contractor specifications.
- **Trash/Debris Removal.** During project construction activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all spoils, trash, or any debris will be removed off-site to an approved disposal facility or stored appropriately.
- **Speed Limits.** Vehicles will be restricted to existing access roads and approved work areas and will maintain speed limits of no greater than 15 miles per hour on unpaved roads.

#### **AMM-2: Special-Status Plants**

Prior to construction that could potentially remove special-status plants, a qualified botanist shall conduct a pre-construction floristic inventory and focused rare plant survey to determine and map the location and extent of special-status plant species populations within disturbance areas within suitable habitat. This survey shall occur during the typical blooming periods of special-status plants with the potential to occur: Parry's spineflower (*Chorizanthe parryi* var. *parryi*; CRPR 1B.1; blooming period April – June), Plummer's mariposa lily (*Calochortus plummerae*; CRPR 4.2; blooming period May – July), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*; CRPR 4.3; blooming period January – July), Santa Ana River woollystar (*Eriastrum*



Ms. Michelle Morrison  
March 18, 2024  
Page 40

*densifolium* ssp. *sanctorum*; FE, SE, CRPR 1B.1; blooming period April – September), and slender-horned spineflower (*Dodecahema leptoceras*; FE, SE, CRPR 1B.1; blooming period April – June). The plant survey shall follow the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018).

If special-status plants are not identified within the project impact area, then ground-disturbing activities may commence. If special-status plants are detected and project-related impacts are unavoidable, then the preparation and implementation of a special-status species salvage, seed collection, and replanting plan would be required, and consultation with the regulatory agencies would be required to address potential take of listed plant species. The salvage, seed collection, and replanting plan shall include measures to salvage, collect seed, replant, and monitor the disturbance area until native vegetation is re-established.

Pre-construction special-status plant surveys are scheduled to be conducted in 2024. If construction does not begin by 2027, a qualified botanist shall conduct an additional pre-construction floristic inventory and focused rare plant survey in accordance with the guidance above during the appropriate blooming period the year prior to the commencement of project activities.

### **AMM-3: Nesting Birds/Raptors and Special-Status Birds**

Project activities could negatively impact nesting birds that are protected in accordance with the MBTA and FGC, as well as other special-status avian species, such as the Bell's sparrow, burrowing owl, California horned lark, coastal California gnatcatcher, loggerhead shrike, and southern California rufous-crowned sparrow. No physical disturbance of vegetation, operational structures, buildings, or other potential habitat (e.g., open ground, gravel, construction equipment or vehicles, etc.) that may support nesting birds protected by the MBTA and FGC shall occur in the breeding season, except as necessary to respond to public health and safety concerns, or otherwise authorized by the Engineer. The breeding season extends from February 15 through August 31 for passerines and general nesting and from January 1 through August 31 for raptors.

- If nesting habitat (including annual grasses and forbs, brittle bush scrub, California buckwheat – brittle bush scrub, chamise chaparral – hairy yerba santa scrub, and hairy yerba santa scrub habitats, as well as the disturbed land cover types within the study area) must be cleared or project activities must occur within 500 feet of nesting habitat within the breeding season as defined above, a qualified biologist shall perform a nesting bird survey no more than three days prior to clearing or removal of nesting habitat or start of project activities. Surveys will be performed in all Metropolitan accessible areas (fee property and easements) and inaccessible areas will be visually surveyed to their full extent without trespassing.
- If active nests for sensitive species, raptors and/or migratory birds are observed, an adequate buffer zone or other avoidance and minimization measures, as appropriate, shall be established, as identified by a qualified biologist and approved by the Engineer. Construction avoidance buffers are generally 300 feet for non-listed passerines and 500 feet for listed avian species (i.e., coastal California gnatcatcher) and raptors; however, avoidance buffers may be modified at the discretion of the biologist, depending on the species, location of the nest and species tolerance to human presence and construction-related noises and vibrations. The buffer shall



Ms. Michelle Morrison  
March 18, 2024  
Page 41

be clearly marked in the field by the Contractor, as directed by the Engineer, and construction or clearing shall not be conducted within this zone until the young have fledged and are no longer reliant on the nest.

- Additional measures may include (but are not limited to): construction avoidance, until the nest is no longer active, noise attenuation measures to reduce construction noise levels to below 60 dBA Leq (an hourly measurement of A-weighted decibels) or ambient (if existing ambient levels are above 60 dBA), and biological monitoring during construction activities to ensure the species is not harmed during Project implementation.
- A qualified biologist shall monitor active nests or nesting bird habitat within or immediately adjacent to project construction areas, and the Engineer shall provide necessary recommendations to the Contractor to minimize or avoid impacts to protected nesting birds.

#### **AMM-4: Crotch Bumble Bee**

Project activities could negatively impact suitable Crotch bumble bee foraging and/or nesting habitat within the California buckwheat – brittle bush scrub planned for removal in the project area. Therefore, the following measures are recommended to avoid impacts to this species.

- A qualified entomologist familiar with the species' behavior and life history shall conduct surveys to determine presence/absence of the Crotch bumble bee within the year prior to vegetation removal and/or grading in areas that provide suitable habitat for this species. A minimum of three surveys, ideally 2-4 weeks apart, should also be conducted during peak flying season when the species is most likely to be detected above ground, between March 1 to September 1 and during peak bloom of nectaring resources (Thorp et al. 1983; CDFW 2023c). At minimum, a survey report should provide the following:
  - A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch bumble bee.
  - Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched.
  - Map(s) showing the location of nests/colonies.
  - A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).
- If Crotch bumble bee is detected, the qualified entomologist should identify the location of all nests within and adjacent to the project site. A 15-meter (50-foot) no disturbance buffer zone should be established around any identified nest(s) to reduce the risk of disturbance or accidental take. A qualified entomologist should expand the buffer zone as necessary to prevent disturbance or take.





Ms. Michelle Morrison  
March 18, 2024  
Page 42

- If Crotch bumble bee is detected and impacts to Crotch bumble bee cannot be feasibly avoided, Metropolitan should consult with CDFW and obtain appropriate take authorization from CDFW (pursuant to FGC, § 2080 et seq).
- Any floral resource associated with Crotch bumble bee that will be removed or damaged by the project should be replaced at no less than 1:1, as determined in consultation with CDFW.

### **AMM-5: Western Spadefoot**

Although limited suitable breeding habitat is present within the constructed basin and associated drainage located in the project area, project activities could negatively impact suitable western spadefoot upland habitat, including all of the natural communities and excluding the disturbed and developed land cover, within the small mammal burrows located in the project area. Therefore, the following measures are recommended to avoid impacts to this species.

- A qualified biologist shall survey areas of suitable habitat for western spadefoot in the project area, including ruts, small pools, and the constructed basin and associated drainage. The survey shall be conducted during the active season of western spadefoot (which corresponds with the rainy season).
- If surveys result in the observation of western spadefoot within project impact areas, observed individuals and/or eggs shall be removed from project impact areas and be relocated to pre-determined suitable habitat in an appropriate area that will not be impacted.
- For work during the western spadefoot toad migration and breeding season (November 1 to May 31), a qualified biologist will survey the active work areas (including access roads) in the mornings following measurable precipitation events. Construction may commence upon confirmation from the biologist that no western spadefoot toads are in the work area.
- When feasible, a 50-foot avoidance buffer will be maintained around burrows that provide suitable upland habitat for western spadefoot toad, as identified by a qualified biologist. The biologist will delineate and mark the no-disturbance buffer.
- If western spadefoot toad is found within the construction footprint, it will be allowed to move out of harm's way on its own accord or a qualified biologist will relocate it to the nearest suitable burrow outside of the construction impact area.
- Prior to beginning work, a qualified biologist will inspect underneath equipment and stored pipes greater than 1.2 inches (3 cm) in diameter for western spadefoot toad. If found, they will be allowed to move out of the construction area on their own accord.



Ms. Michelle Morrison  
March 18, 2024  
Page 43

## **AMM-6: San Bernardino Kangaroo Rat Pre-Construction Presence/Absence Trapping Surveys**

Prior to ground disturbing activities within areas with potential habitat for SBKR or other sensitive small mammals, a qualified SBKR biologist with a required Section 10(a) permit will conduct pre-construction presence/absence trapping surveys. These surveys will follow protocols and trapping methods approved by the regulatory agencies to determine the presence/absence of SBKR and other sensitive small mammals on site.

- If pre-construction presence/absence trapping surveys within the Stage 1 area are negative, then exclusionary fencing (AMM-6) will be installed.
- If SBKR are determined to be present within the Stage 1 project area resulting from the trapping surveys an ITP will need to be obtained. Construction within occupied habitat areas will not proceed until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained.
- Stage 2 construction will not commence until appropriate authorization (i.e., FESA and/or CESA ITP) is obtained. Implementation of protection measures and compensatory mitigation for SBKR, in addition to those identified in this document, will be required as conditions of federal and state take permits.

## **AMM-7: San Bernardino Kangaroo Rat Exclusionary Fencing**

Exclusionary fencing will be erected in construction areas with potential to be occupied by SBKR or containing kangaroo rat sign (e.g., burrows, scat, tail drag, or dust baths) as determined by a preconstruction survey conducted by a qualified biologist.

- A qualified biologist or approved biological monitor will be present on site when the fence is installed to minimize disturbance of SBKR burrows from fence installation.
- The integrity of the fencing will be checked by a qualified biologist at the end of each workday. Any gaps will be repaired immediately.
- Construction access openings will be closed and secured at the end of each workday using the at-grade fencing method.
- The fence will remain in place for the duration of construction activities and removed at the completion of the relevant project activity.
- Stage 1 exclusionary fencing will be installed at grade to minimize the risk of unauthorized take.



Ms. Michelle Morrison  
March 18, 2024  
Page 44

## **AMM-8: San Bernardino Kangaroo Rat and General Construction Monitoring**

- **SBKR Biologist.** A qualified biologist or approved biological monitor will visually inspect trenches and steep-walled holes before the onset of daily construction for presence of SBKR. If SBKR are discovered, the biologist will supervise the movement or relocation of the equipment until the animal has left the area on its own.
  - To the extent feasible, soil stockpiles in SBKR habitat will be located within the construction area inside the exclusionary fence or within the existing facility in areas devoid of vegetation.
  - Nighttime work shall be avoided as much as possible. If nighttime work is necessary, all lighting shall be directed exclusively at the work area to avoid areas that support local wildlife movement, such as ephemeral drainages, to the greatest extent practical. Any nighttime lighting shall be shielded downward as to avoid light spillage into the surrounding areas.
- **Limits of Disturbance.** Prior to construction in or adjacent to habitats for special-status species, and under the direction of a qualified biologist, Metropolitan will clearly delineate the construction right-of-way (stake, flag, fence, etc.) that restricts the limits of construction to the minimum necessary to implement the project.
- **Biological Monitoring.** Prior to the start of construction, Metropolitan will retain a qualified biological monitor(s) to be onsite during the initial ground disturbance and during construction activities to monitor habitat conditions and impacts. The biological monitor will ensure compliance with the AMMs and will have the authority to halt or suspend all activities until appropriate corrective measures have been taken. The biological monitor will be a qualified biologist with species expertise appropriate for this project.
- **On Site Overnight Storage.** All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods should be thoroughly inspected for birds and other wildlife before the pipe is subsequently buried, capped, or otherwise used or moved.

## **AMM-9: Special-Status Ground-Dwelling Wildlife**

Project activities could negatively impact special-status ground-dwelling wildlife that are protected in accordance with the CESA and FGC, such as Belding's orange-throated whiptail, California glossy snake, coast horned lizard, coastal western whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, red-diamond rattlesnake, San Diego black-tailed jackrabbit, San Diego desert woodrat, southern California legless lizard, and southern grasshopper mouse. Therefore, the following measure is recommended to avoid impacts to these species.

- A qualified biologist shall conduct a preconstruction clearance survey throughout the project area. If any of these species are observed during the survey, a qualified biologist should relocate the individual to suitable habitat adjacent to the project area.

## **AMM-10: Burrowing Owl**

Prior to the initiation of any ground disturbing activities within 500 feet of suitable burrowing owl habitat, including all of the natural communities and land cover types within the study area, focused protocol surveys for burrowing owl will be conducted by a qualified biologist throughout the study area following the protocol outlined in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If the qualified biologist finds evidence of burrowing owls during the burrowing owl breeding season (February 1 through August 31), all project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance includes establishment of a minimum 300-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 300-foot buffer zone. Construction and other project-related activities may be allowed inside of the 300-foot avoidance buffer during the breeding season if the nest is not disturbed, and the project activities are monitored by a qualified biologist.

## **Recommended Mitigation Measures**

### **Mitigation Measure BIO-1: Compensation for Impacts to Federally and State-Listed Species Habitat.**

Direct temporary and permanent impacts to suitable habitat for federally or state-listed species shall be mitigated through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies.

- **Temporary Impacts.** Mitigation for direct temporary impacts to suitable habitat for federally or state-listed species shall be provided through on-site restoration. Areas temporarily impacted shall be returned to similar conditions to those that existed prior to grading and/or ground-disturbing activities.
- **Permanent Impacts.** Metropolitan shall purchase credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies to compensate for all permanent loss of suitable habitat for federally or state-listed species (including critical habitat), if available, at a 1:1 ratio. Direct impacts to federally listed species' occupied habitat shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act (ESA) of 1973, as amended. Additionally, direct impacts to federally designated critical habitat that cannot be avoided shall be addressed through either the ESA Section 7 or Section 10(a)(1)(B) process. Direct impacts to state-listed species shall be addressed through the California Fish and Game Code Section 2081(b) incidental take permit process. The two permits and authorization by the agencies with jurisdiction over these resources may require additional measures (e.g., avoidance, conservation, etc.) beyond what is being proposed under this CEQA analysis.



Ms. Michelle Morrison  
March 18, 2024  
Page 46

If you have any questions regarding this letter report, please do not hesitate to contact Amanda French (afrench@esassoc.com) at (530) 966-4294 or Johanna Page (jpage@esassoc.com) at (626) 677-7680.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Amanda French', with a long, sweeping horizontal stroke extending to the right.

Amanda French  
Biologist

A handwritten signature in blue ink, appearing to read 'Johanna Page', with a large, stylized 'J' and 'P'.

Johanna Page  
Principal Biologist

**List of Attachments**

- Attachment A: Results of the 2023 Nighttime Small Mammal Activity Surveys
- Attachment B: Representative Photographs
- Attachment C: Floral and Faunal Compendia
- Attachment D: CNDDDB and CNPS Results
- Attachment E: Exclusionary Fence Design





Ms. Michelle Morrison  
March 18, 2024  
Page 47

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Ms. Michelle Morrison  
March 18, 2024  
Page 48

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# Attachment A

## **Results of the 2023 Nighttime Small Mammal Activity Survey**





# memorandum

date November 16, 2023

to Alfredo Aguirre, Environmental Specialist – Metropolitan Water District of Southern California (Metropolitan)

from Johanna Page, Principal Biologist – Environmental Science Associates (ESA)

subject Results of Nighttime Small Mammal Activity Surveys for Metropolitan’s Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California

Environmental Science Associates (ESA) conducted nighttime small mammal activity surveys for the Metropolitan Water District of Southern California’s (Metropolitan) Inland Feeder Foothill Pump Station Intertie Phase 1 Project (project). The project requires work in areas that are adjacent to occupied San Bernardino kangaroo rat (SBKR; *Dipodomys merriami parvus*) habitat and suitable SBKR burrows were identified within the project site. SBKR is federally listed as endangered, state candidate for listing as endangered and a species of special concern. Based on the findings of previous focused SBKR surveys and SBKR burrow surveys conducted in the survey area in 2022 and 2023, motion-detecting cameras were recommended to determine kangaroo rat presence within the project site. The surveys were conducted in March and July 2023 using nighttime-vision equipment to determine nighttime small mammal activity in the project area, with particular emphasis focused on whether the small mammals are accessing the site from neighboring areas or using burrows within the proposed exclusion fencing areas planned for the project. The March 2023 nighttime small mammal activity survey area corresponds with the future exclusion fencing areas proposed for the project, while the July 2023 nighttime small mammal activity survey corresponds with a larger area and includes burrows where previous SBKR were captured to serve as a control.

## Project Site

The project site is generally located north of the Santa Ana River, south of Greenspot Road, east of State Route 210, and west of State Route 38 in San Bernardino County, California. More specifically, the project site is located southwest of the terminus of Cone Camp Road, north of Weaver Street, within the U.S. Geological Survey (USGS) Redlands 7.5-minute quadrangle (**Figure 1, Regional Vicinity and Project Location**). The project site includes an existing fenced and graded triangular area that encompasses Metropolitan and San Bernardino Valley Municipal Water District (SBVMWD) facilities, as well as the area immediately south and northwest of the existing facility where existing graded maintained roads with California buckwheat – brittle bush scrub (*Eriogonum fasciculatum* – *Encelia farinosa* shrubland) habitat is present interspersed between the existing roads.



## Background

In October 2022, ECORP conducted a protocol-level SBKR trapping survey, which included five nights of consecutive trapping with a total of 135 baited collapsible Sherman live-traps placed in areas of suitable SBKR habitat in the southern portion of the project site (ECORP 2022). Five rodent species were captured during the protocol-level trapping survey: SBKR, San Diego pocket mouse (*Chaetodipus fallax*), Bryant's woodrat (*Neotoma bryanti*), northern Baja deer mouse (*Peromyscus fraterculus*), and deer mouse (*Peromyscus maniculatus*) (ECORP 2022). The 2022 trapping effort yielded a total of three SBKR adult male individuals, captured in four different locations during seven captures, as well as a total of 76 captures of San Diego pocket mouse, 45 captures of northern Baja deer mouse, 18 captures of deer mouse, and 16 Bryant's woodrat captures in the southern extent of the project site. As a result, the project team, in coordination with USFWS, refined the project footprint to avoid areas where SBKR individuals were trapped in 2022 and performed additional biological surveys.

In March 2023, ESA conducted a SBKR burrow survey to determine if potential SBKR burrows occur within the project site, with a focus on the newly proposed project impact areas that were redesigned to avoid take of SBKR (ESA 2023). Based on the findings of the SBKR burrow survey conducted within the southern portion of the project site, subsequent motion-detecting cameras were recommended to identify kangaroo rat presence within the updated temporary and permanent impact areas, also referred to as impact areas in this report. Thus, the nighttime activity survey was designed to confirm where exclusionary fencing should be installed within the southern extent of the project site. The potential SBKR burrows were detected within the northwestern extent of the project site following the installation of the camera installation; thus, were not incorporated in the March 2023 nighttime small mammal activity survey. However, this northwestern portion of the project site was encompassed within the subsequent July 2023 nighttime small mammal activity survey.

## Methodology

### March 2023 Nighttime Small Mammal Activity Survey Area

The March 2023 nighttime small mammal activity survey area (March 2023 survey area) focused on areas with potentially suitable SBKR habitat and SBKR burrows concentrated in the southern portion of the project site, north and south of the existing unnamed dirt access road and southern entrance to the site, and north of Weaver Street (a dirt road). The March 2023 survey area generally overlapped with the proposed exclusion fencing area along the southern extent of the project site, and was identified by overlaying the temporary and permanent impact area boundaries, north and south of the existing graded road to the southern entrance to the existing MWD and SBVMWD facility on site, with the results of the protocol-level SBKR surveys conducted by ECORP in 2022 and subsequent SBKR burrow surveys conducted by ESA in 2023 for the project site (ECORP 2022; ESA 2023) (**Figure 2, SBKR Captures, Potential Burrows, and Camera Locations**). The project was designed to avoid impacts to habitat where SBKR individuals were trapped during protocol-level trapping surveys conducted in 2022 for the project (ECORP 2022). Therefore, the nighttime activity survey was focused on determining small mammal activity within the proposed exclusion fencing areas with suitable SBKR burrows to ensure avoidance.

### July 2023 Nighttime Small Mammal Activity Survey Area

Based on the minimal detection of small mammals captured during the March 2023 nighttime small mammal activity survey, ESA conducted an additional nighttime small mammal activity survey to determine the project area in July 2023. The July 2023 nighttime small mammal activity survey area (July 2023 survey area) focused on

a slightly larger area than accounted for during the March 2023 survey area to include surrounding areas where SBKR were previously captured in 2022 to serve as a control (**Figure 2**). As a result, the July 2023 survey area focused on all suitable SBKR habitat within the project site, including suitable SBKR habitat identified outside of the proposed exclusion fencing area and suitable SBKR habitat in the northwestern extent of the project site. The July 2023 survey was focused on determining use of potential kangaroo rat burrows in the project site (not just within the proposed project impact areas) to gain a better understanding of their use to ensure avoidance.

### **Nighttime Small Mammal Activity Camera Survey**

The camera direction and location were selected according to the burrow locations identified during focused surveys and SBKR burrow survey locations mapped in 2022 and 2023, as well as based on the best line of sight to capture movement in the area (e.g., along dirt areas devoid of vegetation, through breaks in the vegetation, where the exclusion fencing was proposed, and where suitable SBKR burrows occur). Vegetation in the survey area was dense in locations so the biologists focused on installing camera locations in shrub patches that contained open areas with suitable SBKR burrows and bare ground (when possible) to maximize species photo captures. To the extent feasible, cameras were locked inside specialized security boxes to prevent vandalism and theft. Wildlife cameras were either bolted to 4-foot-tall steel posts or cabled to a chain-link fence or vegetation and angled toward the line of sight of the burrow location positioned approximately 1 to 4 feet off the ground. The cameras were oriented away from the sun (to the extent practical) to protect the lens from over-exposure and positioned to capture photographs and short video clips of wildlife walking within the camera's line of sight. Bait was not used as to not attract species from outside of the survey area into the survey area, since the survey's intention was to determine what small mammal species are using the area and where they are travelling in the project area and SBKR were captured outside of the survey area.

Once installed, all wildlife cameras were set to capture images throughout a 24-hour period. Each motion trigger was set to capture three consecutive photographs and a 20-second video clip, also considered a unique camera detection in this report, at intervals of at least 30 seconds between each unique camera detection. The wildlife cameras were placed on site for a minimum of five days. During the July 2023 nighttime activity survey, four of the cameras (8A, 12A, 13A, and 14A) that did not appear to function as well were switched with known functioning cameras and were placed on site for an additional three days, for a total of eight days. Upon removal, photographs and videos were reviewed and categorized based on the camera location and species detected. Videos and photographs of human activity, dogs, and/or vehicles were categorized as well to make general assumptions regarding the amount of anthropogenic disturbance in the survey area.

### March 2023 Camera Survey

During the March 2023 nighttime small mammal activity survey, a total of six infrared motion detection wildlife cameras (Bushnell Trophy Cam) were installed within the March 2023 survey area to capture areas where potentially suitable SBKR burrows were abundant in the project area or in areas within the exclusion fencing area closest to where SBKR captures occurred in 2022 during protocol-level surveys (ECORP 2022). The wildlife cameras were installed on March 24, 2023, and removed on March 28, 2023. Specific data on the location and duration of monitoring at each remote wildlife camera is provided in **Table 1** and the camera locations are depicted in **Figure 2**. The target species for this study were small mammals, with a focus on rodent species such as mice, woodrats, and kangaroo rat species known to occur in the project site based on previous trapping surveys.

**TABLE 1  
MARCH 2023 REMOTE NIGHTTIME ACTIVITY SURVEY CAMERA LOCATIONS**

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-01	3/24/2023–3/28/2023	5 days	Lat: 34.106352° Long: -117.140944°	Facing east toward burrow 30 (north of graded road).
C-02	3/24/2023–3/28/2023	5 days	Lat: 34.106385° Long: -117.140441°	Facing southwest toward the general area of burrows 7 and 8 (north of graded road).
C-03	3/24/2023–3/28/2023	5 days	Lat: 34.106304° Long: -117.139997°	Facing north toward burrow 13, with burrows 10 and 12 in the background (north of graded road).
C-04	3/24/2023–3/28/2023	N/A	Lat: 34.106362° Long: -117.139756°	Facing east toward burrows 21, 22, and 26, with burrow 25 in the background (north of graded road).
C-05	3/24/2023–3/28/2023	5 days	Lat: 34.106264° Long: -117.139912°	Facing north toward burrow 14 (north of graded road).
C-06	3/24/2023–3/28/2023	5 days	Lat: 34.106116° Long: -117.139955°	Facing northwest toward burrows 42 and 43 (south of graded road and north of Weaver Street).

July 2023 Camera Survey

During the July 2023 nighttime small mammal activity survey, a total of 15 infrared motion detection wildlife cameras (Bushnell Trophy Cam, Browning, and Reconyx) were installed within the July 2023 survey area to capture photos in areas where potentially suitable SBKR burrows were abundant in the project area or in areas within the exclusion fencing area closest to where SBKR captures occurred in 2022 during protocol-level surveys (ECORP 2022). The majority of the wildlife cameras were installed on July 5, 2023, and removed on July 10, 2023. However, some cameras appeared to not function well in the field and were switched out with better cameras on July 10, 2023, and left on site until July 13, 2023 (these cameras are labelled with “A” next to their number value in **Table 2** below). Specific data on the location and duration of monitoring at each remote wildlife camera is provided in **Table 2** and the camera locations are depicted in **Figure 2**. Similarly, the target species for this study were small mammals, with a focus on rodent species such as mice, woodrats, and kangaroo rat species known to occur in the project site based on previous trapping surveys.

**TABLE 2  
JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY CAMERA LOCATIONS**

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-1*	7/5/2023–7/10/2023	5 days	Lat: 34.106352° Long: -117.140944°	Facing northeast toward burrow 30 (north of graded road).
C-2*	7/5/2023–7/10/2023	5 days	Lat: 34.106291° Long: -117.140665°	Facing east toward burrow 6 (immediately W of SCE pole #254468E and north of graded road).
C-3*	7/5/2023–7/10/2023	5 days	Lat: 34.106380° Long: -117.140609°	Facing northeast toward burrows 7 and 8 (north of graded road).
C-4*	7/5/2023–7/10/2023	5 days	Lat: 34.106385° Long: -117.140033°	Facing west toward burrows 10 and 12 (north of graded road).
C-5*	7/5/2023–7/10/2023	5 days	Lat: 34.106289° Long: -117.140028°	Facing southwest toward burrow 11 (north of graded road).

Camera	Deployment Dates	Camera Duration	Location	Camera Direction
C-6*	7/5/2023–7/10/2023	5 days	Lat: 34.106116° Long: -117.139955°	Facing northwest toward burrows 42 and 43 (south of graded road and north of Weaver Street).
C-7	7/5/2023–7/10/2023	5 days	Lat: 34.106402° Long: -117.139813°	Facing southwest toward burrows 15, 16, and 17 (north of graded road and east of exclusion fencing area).
C-8*	7/5/2023–7/10/2023	5 days	Lat: 34.108153° Long: -117.141675°	Facing southeast toward burrows 47 and 48 (northwestern portion of project site).
C-8A*	7/10/2023–7/13/2023	3 days	Lat: 34.108153° Long: -117.141675°	Facing southeast toward burrows 47 and 48 (northwestern portion of project site; new camera).
C-9	7/5/2023–7/10/2023	5 days	Lat: 34.106286° Long: -117.139893°	Facing north toward burrow 14 (north of graded road and east of exclusion fencing area).
C-10	7/5/2023–7/10/2023	5 days	Lat: 34.106134° Long: -117.139592°	Facing east toward burrows 45 and 46 (south of graded road, north of Weaver Street, and east of exclusion fencing area).
C-11	7/5/2023–7/10/2023	5 days	Lat: 34.106294° Long: -117.139600°	Facing north toward burrow 28 (north of graded road and east of exclusion fencing area).
C-12	7/5/2023–7/10/2023	5 days	Lat: 34.106313° Long: -117.141269°	Facing west toward burrows 1, 2, and 3 (north of graded road and west of exclusion area).
C-12A	7/10/2023–7/13/2023	3 days	Lat: 34.106313° Long: -117.141269°	Facing west toward burrows 1, 2, and 3 (north of graded road and west of exclusion area; new camera).
C-13	7/5/2023–7/10/2023	5 days	Lat: 34.106136° Long: -117.141465°	Facing south toward burrows 41 (south of graded road and west of exclusion area).
C-13A	7/10/2023–7/13/2023	3 days	Lat: 34.106136° Long: -117.141465°	Facing south toward burrows 41 (south of graded road and west of exclusion area; new camera).
C-14*	7/5/2023–7/10/2023	5 days	Lat: 34.108311° Long: -117.141672°	Facing east toward burrow 49 (northwestern portion of project site).
C-14A*	7/10/2023–7/13/2023	3 days	Lat: 34.108311° Long: -117.141672°	Facing east toward burrow 49 (northwestern portion of project site; new camera).
C-15	7/5/2023–7/10/2023	5 days	Lat: 34.106395° Long: -117.139750°	Facing northeast toward burrows near 22-26 (north of graded road and east of exclusion fencing area).

\* Camera locations located within the proposed project impact areas.

## Results

### March 2023 Nighttime Small Mammal Activity Survey Results

During the March 2023 nighttime small mammal activity survey, five of the six wildlife cameras captured data during the survey effort spanning over five days. Wildlife camera 4 (C-04) malfunctioned and did not capture any photos during the survey. Species detected at the five functioning wildlife camera locations (C-01, C-02, C-03, C-05, and C-06) included coyote (*Canis latrans*), California ground squirrel (*Otospermophilus douglasii*), desert cottontail (*Sylvilagus audubon*), various bird species (i.e., swallows (*Hirundo* spp.), common ravens (*Corvus corax*), and American crows (*Corvus brachyrhynchos*)), western fence lizard (*Sceloporus occidentalis*), invertebrates (i.e., flies, bees, moths, and butterflies), and domesticated dog. Vehicles also accounted for a

number of the photo captures within March 2023 survey area. A summary of the results of the wildlife camera data from March 24, 2023, to March 28, 2023, can be found in **Table 3**.

**TABLE 3  
MARCH 2023 REMOTE NIGHTTIME ACTIVITY SURVEY DATA (UNIQUE CAMERA DETECTIONS)**

Camera Station No.	Coyote	Domesticated Dog	California Ground Squirrel	Desert Cottontail	Swallow, Crow, Raven	Fence Lizard	Fly, Bee, Moth, Butterfly	Car, Truck
	Mammals				Birds	Reptiles	Invertebrates	Vehicle
C-01	4	0	0	0	0	0	0	0
C-02	6	0	0	10	0	0	0	0
C-03	2	0	0	0	8	0	4	8
C-04	Camera Malfunctioned (No Data)							
C-05	0	0	0	14	0	1	14	10
C-06	0	2	46	13	0	0	1	8
<b>Total</b>	<b>12</b>	<b>2</b>	<b>46</b>	<b>37</b>	<b>8</b>	<b>1</b>	<b>19</b>	<b>26</b>

The most common wildlife species detected during the March 2023 nighttime small mammal activity survey was California ground squirrel (46 unique camera detections) and desert cottontail (37 unique camera detections), followed by invertebrates (19 unique camera detections), coyote (12 unique camera detections), birds (8 unique camera detections), domesticated dog (2 unique camera detections), and fence lizard (1 unique camera detections). Many of the photos taken of these species are likely of the same individuals recurring through the photograph frame and captured numerous times. Thus, the total unique camera detections captured are not representative of these species' population size in the area. Additionally, California ground squirrel observations were most prevalent during the daytime, while desert cottontail was captured primarily in the early mornings and evenings. Although coyotes triggered 12 unique camera detections across three camera locations (C-1, C-2, and C-3), based on the time stamp of the detection and the sightings, these detections are from one or two coyote individuals captured across multiple cameras based on the view from camera 1 which shows the coyote going through the line of sight of other cameras located in the survey area. No Rodentia species were detected during the March 2023 nighttime activity survey. Representative photographs of wildlife species detected in March 2023 are included in **Attachment A, Representative Photographs of Wildlife Detected during the Nighttime Activity Survey**.

**July 2023 Nighttime Small Mammal Activity Survey Results**

During the subsequent July 2023 nighttime small mammal activity survey, all 15 wildlife cameras captured data during the survey effort spanning a minimum of five days. Four of the wildlife cameras (C-8, C-12, C-13, and C-14) were not working to their fullest extent (e.g., were capturing only video, minimal images were captured, etc.) and were replaced with known functioning cameras and were left on site for an additional three days; thus,



cameras at these camera locations captured images for a total of eight days. Species detected at the 15 wildlife camera locations included coyote, California ground squirrel, desert cottontail, deer mouse (*Peromyscus* sp.), kangaroo rat (*Dipodomys* sp.), pocket mouse (*Chaetodipus* sp.), rodent (unknown) (Rodentia that could not be determined to genus from the photo capture), woodrat (*Neotoma* sp.), various birds (swallow, crow, raven, and towhee (*Pipilo* spp.)), herptiles (i.e., fence lizard, whiptail (*Aspidoscelis* sp.), and toad), invertebrates (i.e., flies, bees, moths, butterflies, unknown), and vehicles. A summary of the results of the wildlife camera data from July 5, 2023, to July 13, 2023, can be found in **Table 4**. Eight of the camera locations (C-1 through C-6, C-8, and C-14) occurred within the proposed project impact area, while the remaining seven camera locations (C-7, C-9 through C-13, and C-15) were installed outside of the proposed project impact area. The eight camera locations installed within the project impact area are highlighted in brown in **Table 4** below.

**TABLE 4  
JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY DATA (UNIQUE CAMERA DETECTIONS)**

Camera Station No.	Coyote	California Ground Squirrel	Desert Cottontail	Deer Mouse	Kangaroo Rat	Pocket Mouse	Rodent (Unknown)	Woodrat	Swallow, Crow, Raven, Towhee	Fence Lizard	Whiptail	Toad	Fly, Bee, Moth, Butterfly	Car, Truck
	Mammals								Birds	Herptiles			Invertebrates	Vehicle
C-1	0	0	0	4	0	0	0	0	0	4	7	0	17	14
C-2*	1	0	4	2	8	0	2	10	2	3	4	0	2	1
C-3*	0	0	1	0	1	0	0	0	0	0	0	0	4	54
C-4*	0	0	7	0	1	0	0	0	0	0	2	1	0	0
C-5	0	0	0	4	0	0	0	0	0	0	2	3	5	0
C-6	0	0	1	0	0	0	0	0	0	0	0	0	15	5
C-7*	2	1	7	11	2	0	5	0	0	0	4	0	2	0
C-8	0	0	0	0	0	0	0	0	0	0	0	0	18	3
C-8A	0	0	0	0	0	6	0	0	0	0	0	0	0	0
C-9*	0	1	13	0	6	0	0	4	1	0	0	0	2	0
C-10	0	0	1	0	0	0	0	2	0	0	1	0	34	0
C-11	0	0	0	0	0	0	3	0	0	0	0	0	22	0
C-12*	0	0	1	1	4	0	0	0	0	0	0	0	1	0
C-12A*	0	1	0	0	4	0	0	0	0	0	1	0	63	0
C-13	0	0	0	0	0	0	0	0	0	0	0	0	3	0
C-13A	0	0	0	0	0	0	0	0	0	0	0	0	58	0
C-14	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C-14A	0	0	2	3	0	0	0	0	0	0	1	1	1	0
C-15	0	0	1	0	0	0	0	0	0	0	0	0	2	2
<b>Total</b>	<b>3</b>	<b>3</b>	<b>38</b>	<b>25</b>	<b>26</b>	<b>6</b>	<b>10</b>	<b>16</b>	<b>3</b>	<b>7</b>	<b>22</b>	<b>5</b>	<b>250</b>	<b>79</b>

\* Camera locations with kangaroo rat detection(s).

The most common wildlife species detected during the July 2023 nighttime small mammal activity survey were invertebrates (250 unique camera detections), followed by desert cottontail (38 unique camera detections), kangaroo rat (26 unique camera detections), deer mouse (25 unique camera detections), and whiptail (22 unique camera detections). Other species observed less frequently include woodrat (16 unique camera detections), unknown Rodentia (10 unique camera detections), fence lizard (7 unique camera detections), pocket mouse (6 unique camera detections), toad (5 unique camera detections), California ground squirrel (3 unique camera detections), and coyote (3 unique camera detections). During July 2023, Rodentia species accounted for a total of 83 unique camera detections and may have been of the same individuals recurring through the photograph frame and captured numerous times. Thus, the total unique camera detections captured are not representative of their population size in the area. Representative photographs of wildlife species detected in July 2023 are included in **Attachment A**.

**Weather**

Weather likely played a role in the lack of Rodentia activity detected during the March 2023 nighttime activity small mammal activity survey effort, which resulted in additional nighttime small mammal activity surveys being warranted in July 2023. During the March 2023 nighttime small mammal activity survey, temperatures ranged from a low of 34.5° Fahrenheit (F) to a high of 71.4° F with most nighttime temperatures occurring between 37° F and 50° F during the time when kangaroo rats would be most active. During the July 2023 nighttime small mammal activity survey, temperatures ranged from a low of 54.3° F to a high of 101.8° F with most nighttime temperatures occurring between 57° F and 75° F during the time when kangaroo rats would be most active. Weather data for the March and July 2023 survey dates are summarized in **Tables 5 and 6**.

**TABLE 5  
MARCH AND JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY WEATHER DATA**

Average Weather Conditions	March 2023 Dates					July 2023 Dates									
	3/24	3/25	3/26	3/27	3/28	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	
Temperature Low (°F)	41.7	37.4	34.5	38.3	41.7	55.8	54.7	54.3	55.8	55.8	57.4	63.0	66.9	66.7	
Temperature High (°F)	63.3	64.0	63.5	68.5	71.4	94.8	91.8	89.8	91.2	91.2	99.1	101.8	98.8	98.8	
Temperature Average (°F)	51.3	50.0	49.8	52.4	56.1	74.6	72.5	71.2	72.1	73.2	77.9	81.8	82.7	82.3	
Wind Low (MPH)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Wind High (MPH)	9.8	12.5	8.5	8.5	8.1	10.1	7.4	8.1	8.5	7.2	7.2	6.9	7.4	7.4	
Wind Average (MPH)	0.9	1.3	1.2	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	
Wind Direction	WNW	SSE	NNW	SE	WNW	NW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	
Precipitation Average (in.)	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Moon Phase	WC	WC	WC	WC	FQ	WG	WG	WG	LQ	LQ	LQ	WC	WC	WC	
Moon Visibility (%)	11.7	19.3	28.0	37.4	50.0	88.6	79.9	69.8	28.8	47.7	37.0	27.1	18.5	11.3	

Legend:

°F = degrees Fahrenheit

MPH = miles per hour

in. = inches

% = percent

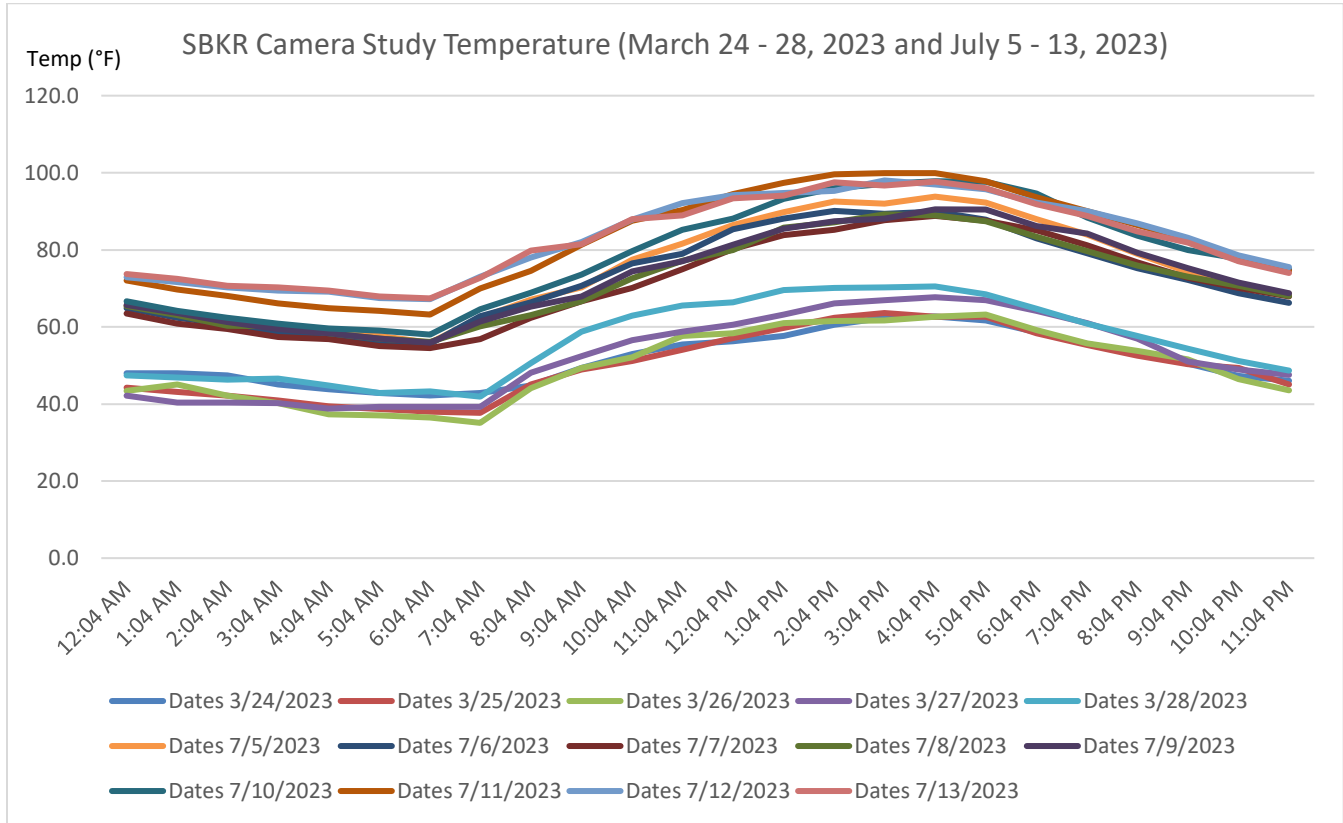
FQ = First Quarter

LQ = Last Quarter

WC = Waxing Crescent

WG = Waning Gibbous

**TABLE 6**  
**MARCH AND JULY 2023 REMOTE NIGHTTIME ACTIVITY SURVEY TEMPERATURE GRAPH**



## Discussion

The March 2023 nighttime small mammal activity survey focused on the small mammal movement in the southern portion of the project site where the exclusion fencing was proposed. Although two small mammals, California ground squirrel and desert cottontail, were frequently detected in the survey area during the March 2023 nighttime small mammal activity survey effort, no rodent species were observed. Based on the results of the previous SBKR trapping efforts conducted in the project site in 2022, five rodent species are known to occur in the general project area: SBKR (3 individuals over 7 captures outside the survey area), San Diego pocket mouse (76 total captures), Bryant’s woodrat (45 total captures), northern Baja deer mouse (16 total captures), and deer mouse (18 total captures) (ECORP 2022). Thus, ESA anticipated capturing unique camera detections for rodent species known to occur in the survey area during the nighttime activity survey. Cameras were placed in a manner that should have captured rodent activity if present on site, and cameras detected species of similar size or smaller and less detectable than rodents (i.e., invertebrates and fence lizards). Thus, weather was thought to have played a major role in why other rodent species that were likely to be present in the survey area were not detected during the March 2023 nighttime activity survey.

During the March 2023 survey effort, the weather dropped below 50° Fahrenheit (F) and was documented as low as 34.5°F on March 26, 2023, during the time that these species would have been active in the nighttime if present (see **Tables 5** and **6**). Based on literature review, San Diego pocket mouse is active year-round, but are known to have reduced activity during cold spells (Zeiner 1990). Likewise, although deer mice do not hibernate, they may become dormant (torpid) when weather is especially severe (University of California Agriculture and

Natural Resources 2012). While it was unclear whether the cold weather experienced during the nighttime activity survey may have influenced kangaroo rat or woodrat movement in the area, it is likely that the movement of San Diego pocket mouse, northern Baja deer mouse, and deer mouse known to occur in the area was affected by the cold spell experienced during the nighttime activity survey. As a result of the lack of Rodentia species identified during the March 2023 nighttime activity survey effort, it was recommended that an additional nighttime activity survey be conducted when weather conditions are more suitable for rodent detection, that additional cameras be installed throughout the southern portion of the project site to get a better understanding of all small mammal movement in the southern portion of the project site, and the more recently documented suitable SBKR burrows in the northwestern portion of the project site also be included in the survey to gain a more thorough understanding of rodent activity throughout the project site. Thus, an additional nighttime activity survey was conducted in July 2023.

The July 2023 nighttime small mammal activity survey was conducted in summer when temperatures were more conducive to capturing photos of rodent activity in the project area and included a slightly larger area to cover all areas with suitable SBKR habitat (i.e., within the northwestern portion of the project site and areas outside of project impact areas). The July 2023 nighttime activity survey effort resulted in the detection of four rodent genus including: 25 unique camera detections for deer mouse (*Peromyscus* sp.), 26 unique camera detections for kangaroo rat (*Dipodomys* sp.), 6 unique camera detections for pocket mouse (*Chaetodipus* sp.), and 16 unique camera detections for woodrat (*Neotoma* sp.). Additionally, 10 unique camera detections were confirmed to be rodents but could not be determined to genus based on the photo captures; thus, is represented as unknown rodent in the data. A total of 83 unique camera detections were captured for rodent species during the July 2023 nighttime activity survey. Kangaroo rat individuals were confirmed at six camera locations, including C-2, C-3, and C-4 within the proposed work areas and C-7, C-9, and C-12/12A outside of proposed work areas. Although there is no way to confirm the kangaroo rat to species level during the photo captures, it is assumed that these photo detections may be SBKR based on species known to occur in the area; however, Dulzura kangaroo rat (*Dipodomys simulans*) range also overlaps with the project site and survey areas. Therefore, additional trapping efforts would be required to confirm the species of kangaroo rat present on site.

## Recommendations

We recommend small mammal trapping be conducted in the project area to confirm the presence of kangaroo rat species on the project site. Alternatively, Metropolitan could assume the presence of SBKR on the project site and obtain take permits under the state and federal Endangered Species Acts (ESAs). This would ensure that the project is covered for incidental take if SBKR is found on the site in the future.

## References

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- ESA. 2023. Results of a San Bernardino Kangaroo Rat Burrow Survey for Metropolitan's Inland Feeder Foothill Pump Station Intertie Phase 1 Project, City of Highland, San Bernardino County, California. April 13, 2023. 4 pp.

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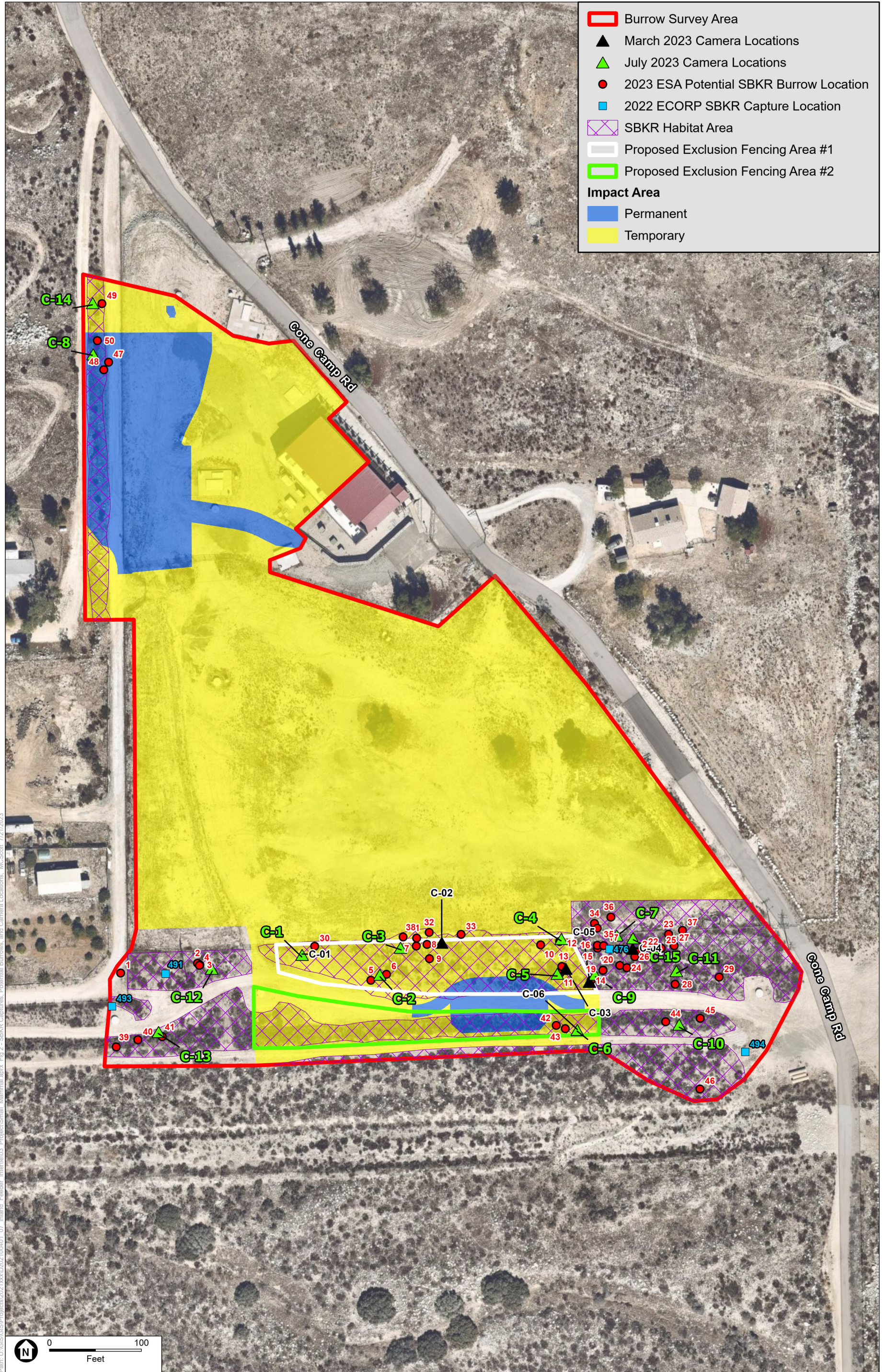
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SOURCE: ESA, 2023

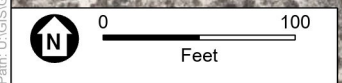
Inland Feeder Foothill Pump Station Intertie Phase 1 Project  
**Figure 1**  
 Regional Vicinity and Project Location







Path: U:\GIS\Projects\2021\00401\_07\_Inland\_Feeder\_Intertie\03\_Project\Small\_Mammal\atrx\_Fig 2\_SBKR Captures, Potential Burrows, and Camera Locations\_MCS\atrx\_7/21/2023



SOURCE: ESA, 2023

Inland Feeder Foothill Pump Station Intertie Phase 1 Project

**Figure 2**  
SBKR Captures, Potential Burrows, and Camera Locations





Attachment A  
**Representative Photographs of  
Wildlife Detected during the  
Nighttime Activity Surveys**





Coyote detected at Camera 1 in March 2023.



Coyote at Camera 1 in March 2023 (Camera 2 light triggered in background).



Desert cottontail detected at Camera 2 in March 2023.



Coyote detected at Camera 2 in March 2023.



A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Desert cottontail detected at Camera 5 in March 2023.



California ground squirrel detected at Camera 6 in March 2023.



Domesticated dog detected at Camera 6 in March 2023.



Desert cottontail detected at Camera 6 in March 2023.





Deer mouse detected at Camera 1 in July 2023.



Deer mouse detected at Camera 1 in July 2023.



Whiptail detected at Camera 1 in July 2023.



Deer mouse detected at Camera 2 in July 2023.

A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Kangaroo rat detected at Camera 2.



Kangaroo rat detected at Camera 2 in July 2023.



Kangaroo rat detected at Camera 2 in July 2023.



Coyote detected at Camera 2 in July 2023.





Whiptail detected at Camera 2 in July 2023.



Desert cottontail detected at Camera 2 in July 2023.



Woodrat detected at Camera 2 in July 2023.



Kangaroo rat detected at Camera 3 in July 2023.



A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Desert cottontail detected at Camera 3 in July 2023.



Two desert cottontails detected at Camera 4 in July 2023.



Kangaroo rat detected at Camera 4 in July 2023.



Whiptail detected at Camera 4 in July 2023.





Desert cottontail detected at Camera 4 in July 2023.



Deer mouse detected at Camera 5 in July 2023.



Toad detected at Camera 5.



Desert cottontail detected at Camera 6 in July 2023.





Desert cottontail detected at Camera 7 in July 2023.

Deer mouse detected at Camera 7 in July 2023.

Deer mouse detected at Camera 7 in July 2023.

Coyote detected at Camera 7 in July 2023.





Whiptail detected at Camera 7 in July 2023.



Deer mouse detected at Camera 7 in July 2023.

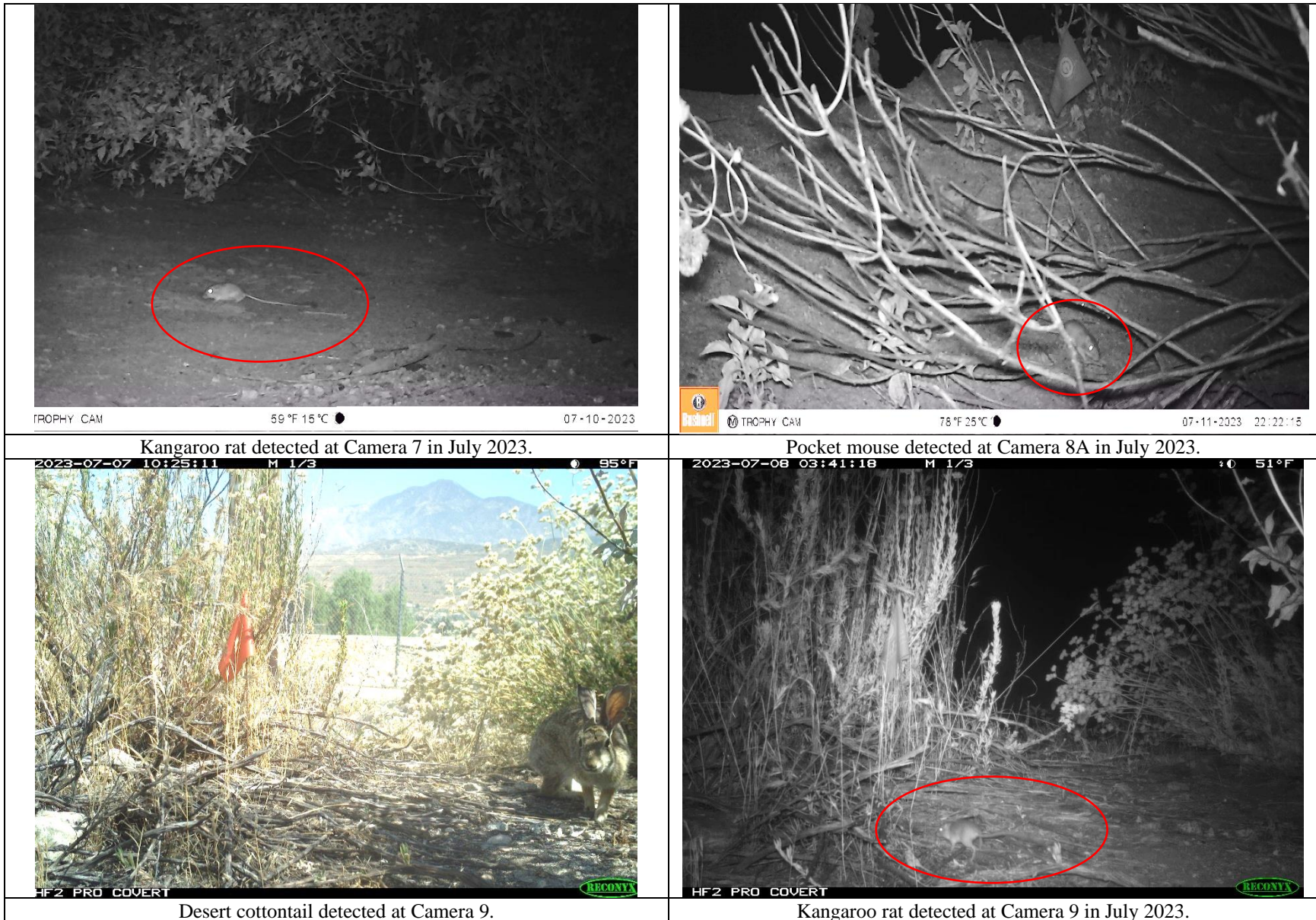


Kangaroo rat detected at Camera 7 in July 2023.



California ground squirrel detected at Camera 7 in July 2023.









Woodrat detected at Camera 9 in July 2023.



Whiptail detected at Camera 10 in July 2023.



Desert cottontail detected at Camera 10 in July 2023.



Woodrat detected at Camera 10 in July 2023.



A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Kangaroo rat detected at Camera 12 in July 2023.



Kangaroo rat detected at Camera 12 in July 2023.



Kangaroo rat detected at Camera 12A in July 2023.



California ground squirrel detected at Camera 12A in July 2023.





Kangaroo rat detected at Camera 12A in July 2023.



Kangaroo rat detected at Camera 12A in July 2023.



Foraging kangaroo rat detected at Camera 12A in July 2023.



Deer mouse detected at Camera 14 in July 2023.



A. Representative Photographs of Wildlife Detected during the Nighttime Activity Survey



Desert cottontail detected at Camera 14 in July 2023.



Juvenile toad detected at Camera 14 in July 2023.



Deer mouse detected at Camera 14 in July 2023.



Desert cottontail detected at Camera 15 in July 2023.

**Attachment B**  
**Representative Photographs**







**Photo 1 (N).** Photograph depicts the annual grasses and forbs habitat located northeast of the project area within the study area.



**Photo 2 (N).** Photograph depicts the brittle bush scrub habitat located east of the project area within the study area.





**Photo 3 (E).** Photograph depicts the brittle bush-California buckwheat scrub habitat present within and surrounding the constructed drainage located south of the project area within the study area.



**Photo 4 (W).** Photograph depicts the chamise chaparral-brittle bush scrub habitat within the southeastern portion of the study area outside of the project area.





**Photo 5 (W).** Photograph depicts the southern portion of the project area.



**Photo 6 (N).** Photograph depicts the potentially suitable SBKR habitat present along the west side of the project area.





**Photo 7 (S).** Photograph depicts the hairy yerba santa scrub habitat present within the southern portion of the study area outside of the project area.



**Photo 8 (W).** Photograph depicts Ephemeral Drainage 1 located within the northern portion of the study area outside of the project area.





**Photo 9 (W).** Photograph depicts Ephemeral Drainage 2 located within the southern portion of the study area outside of the project area.



**Photo 10 (W).** Photograph depicts Ephemeral Drainage 3 located within the southern portion of the study area outside of the project area.

Attachment C  
**Floral and Faunal Compendia**





Scientific Name	Common Name	Comment
<b>Flora</b>		
<b>Angiosperms</b>		
<b>Eudicots</b>		
<b>Anacardiaceae</b>	<b>Cashew Family</b>	
<i>Rhus ovata</i>	sugar bush	
<i>Schinus molle</i> *	Peruvian pepper tree	
<b>Asteraceae</b>	<b>Aster Family</b>	
<i>Ambrosia psilostachya</i>	western ragweed	
<i>Artemisia californica</i>	California sagebrush	
<i>Baccharis salicifolia</i>	mule fat	
<i>Centaurea melitensis</i>	Maltese star thistle	
<i>Encelia farinosa</i>	brittlebush	
<i>Gutierrezia californica</i>	California matchweed	
<i>Helianthus annuus</i>	common sunflower	
<i>Heterotheca grandiflora</i>	telegraphweed	
<b>Bigoniaceae</b>	<b>Bigonia Family</b>	
<i>Jacaranda mimosifolia</i> *	black poui	
<b>Boraginaceae</b>	<b>Forget-me-not Family</b>	
<i>Amsinckia menziesii</i>	small flowered fiddleneck	
<b>Brassicaceae</b>	<b>Mustard Family</b>	
<i>Brassica nigra</i> *	black mustard	
<i>Brassica tournefortii</i> *	Saharan mustard	
<i>Hirschfeldia incana</i> *	short-podded mustard	
<b>Cactaceae</b>	<b>Cactus Family</b>	
<i>Cylindropuntia californica</i>	California cholla	
<b>Convolvulaceae</b>	<b>Bindweed Family</b>	
<i>Cuscuta californica</i>	California dodder	
<b>Cucurbitaceae</b>	<b>Gourd Family</b>	
<i>Marah macrocarpa</i>	chilicothe	
<b>Cupressaceae</b>	<b>Cypress Family</b>	
<i>Cupressus sempervirens</i> *	Italian cypress	
<b>Fabaceae</b>	<b>Pea Family</b>	
<i>Acmispon glaber</i>	deerweed	
<b>Fagaceae</b>	<b>Beech, Chestnut, and Oak Family</b>	
<i>Quercus</i> sp.	scrub oak	
<b>Geraniaceae</b>	<b>Geranium Family</b>	
<i>Erodium botrys</i> *	broad leaf filaree	

Scientific Name	Common Name	Comment
<i>Erodium</i> sp.*	filaree	
<b>Hydrophyllaceae</b>	<b>Waterleaf Family</b>	
<i>Phacelia distans</i>	common phacelia	
<b>Malvaceae</b>	<b>Mallow Family</b>	
<i>Malva parviflora</i> *	cheeseweed mallow	
<b>Myrtaceae</b>	<b>Myrtle Family</b>	
<i>Eucalyptus</i> sp.*	eucalyptus	
<b>Namaceae</b>	<b>Nama Family</b>	
<i>Eriodictylon trichocalyx</i>	hairy yerba santa	
<b>Nyctaginaceae</b>	<b>Four O'Clock Family</b>	
<i>Mirabilis laevis</i>	desert wishbone bush	
<b>Oleaceae</b>	<b>Olive Family</b>	
<i>Olea europaea</i> *	olive	
<b>Polygonaceae</b>	<b>Buckwheat Family</b>	
<i>Eriogonum fasciculatum</i>	California buckwheat	
<i>Eriogonum gracile</i>	slender buckwheat	
<b>Rosaceae</b>	<b>Rose Family</b>	
<i>Adenostoma fasciculatum</i>	chamise	
<b>Rutaceae</b>	<b>Citrus Family</b>	
<i>Citrus x sinensis</i>	orange	
<b>Salicaceae</b>	<b>Willow Family</b>	
<i>Populus fremontii</i>	Fremont cottonwood	
<i>Salix exigua</i>	sandbar willow	
<b>Simaroubaceae</b>	<b>Quassia Family</b>	
<i>Ailanthus altissima</i> *	tree of heaven	
<b>Solanaceae</b>	<b>Nightshade Family</b>	
<i>Datura wrightii</i>	sacred datura	
<i>Nicotiana glauca</i> *	tree tobacco	
<i>Solanum xanti</i> *	purple nightshade	
<b>Tamaricaceae</b>	<b>Tamarisk Family</b>	
<i>Tamarix</i> sp.*	tamarisk	

## Gymnosperms

<b>Pinaceae</b>	<b>Pine Family</b>	
<i>Cedrus deodara</i> *	deodar cedar	

## Monocots

<b>Agavaceae</b>	<b>Agave Family</b>	
<i>Hesperoyucca whipplei</i>	chaparral yucca	



Scientific Name	Common Name	Comment
<b>Areaceae</b>	<b>Palm Family</b>	
<i>Syagrus romanzoffiana</i> *	queen palm	
<b>Poaceae</b>	<b>Grass Family</b>	
<i>Arundo donax</i> *	giant reed	
<i>Avena</i> sp.*	oat	
<i>Bromus</i> sp.*	brome	
<i>Bromus diandrus</i> *	ripgut brome	
<i>Pennisetum setaceum</i> *	fountaingrass	

## Ferns

<b>Pteridaceae</b>	<b>Brake Family</b>	
<i>Pellaea andromedifolia</i>	coffee fern	

Scientific Name	Common Name	Comment
<b>Fauna</b>		
<b>Birds</b>		
<b>Phasianidae</b>	<b>Pheasants</b>	
<i>Pavo cristatus*</i>	Indian peafowl	
<b>Columbidae</b>	<b>Pigeons and Doves</b>	
<i>Streptopelia decaocto*</i>	Eurasian collared dove	
<i>Zenaida macroura</i>	mourning dove	
<b>Trochillidae</b>	<b>Hummingbirds</b>	
<i>Calypte anna</i>	Anna's hummingbird	
<b>Corvidae</b>	<b>Jays and Crows</b>	
<i>Corvus corax</i>	common raven	
<b>Fringillidae</b>	<b>Finches</b>	
<i>Haemorhous mexicanus</i>	House finch	
<i>Sturnella neglecta</i>	western meadowlark	
<b>Aegithalidae</b>	<b>Bushtits</b>	
<i>Psaltriparus minimus</i>	bushtit	
<b>Troglodytidae</b>	<b>Wrens</b>	
<i>Thryomanes bewickii</i>	Bewick's wren	
<b>Parulidae</b>	<b>New World Warblers</b>	
<i>Setophaga coronata</i>	yellow-rumped warbler	
<b>Tyrannidae</b>	<b>Tyrant Flycatchers</b>	
<i>Sayornis nigricans</i>	black phoebe	
<i>Sayornis saya</i>	Say's phoebe	
<b>Poliptilidae</b>	<b>Gnatcatchers and Gnatwrens</b>	
<i>Poliptila caerulea</i>	blue-gray gnatcatcher	
<i>Poliptila californica californica</i>	coastal California gnatcatcher	Federally threatened; CDFW species of special concern
<b>Passerellidae</b>	<b>New World Sparrows</b>	
<i>Melospiza crissalis</i>	California towhee	
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	

Attachment D  
**CNDDDB and CNPS Results**





CALIFORNIA DEPARTMENT OF  
**FISH and WILDLIFE RareFind**

**Query Summary:**

Quad IS (Redlands (3411712) OR San Bernardino North (3411723) OR Harrison Mtn. (3411722) OR Keller Peak (3411721) OR Yucaipa (3411711) OR El Casco (3311781) OR Sunnymead (3311782) OR Riverside East (3311783) OR San Bernardino South (3411713))

**CNDDDB Element Query Results**

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	118	3	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	960	9	None	Threatened	G1G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	ABPBX91091	235	18	None	None	G5T3	S4	null	CDFW_WL-Watch List	Chaparral, Coastal scrub
Allium howellii var. clokeyi	Mt. Pinos onion	Monocots	PMLIL02161	25	1	None	None	G4T2	S2	1B.3	SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Great Basin scrub, Meadow & seep, Pinon & juniper woodlands
Allium marvinii	Yucaipa onion	Monocots	PMLIL02330	47	2	None	None	G1	S1	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral
Anniella stebbinsi	Southern California legless lizard	Reptiles	ARACC01060	427	34	None	None	G3	S3	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Coastal dunes, Coastal scrub
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	1	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	332	1	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, CDFW_WL-Watch List, IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley &

												foothill grassland
<i>Arenaria paludicola</i>	marsh sandwort	Dicots	PDCAR040L0	19	1	Endangered	Endangered	G1	S1	1B.1	SB_SBBG-Santa Barbara Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
<i>Arizona elegans occidentalis</i>	California glossy snake	Reptiles	ARADB01017	260	11	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern	null
<i>Artemisiospiza belli belli</i>	Bell's sparrow	Birds	ABPBX97021	61	2	None	None	G5T2T3	S3	null	CDFW_WL-Watch List	Chaparral, Coastal scrub
<i>Aspidoscelis hyperythra</i>	orange-throated whiptail	Reptiles	ARACJ02060	369	24	None	None	G5	S2S3	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub
<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	Reptiles	ARACJ02143	148	15	None	None	G5T5	S3	null	CDFW_SSC-Species of Special Concern	null
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	Dicots	PDFAB0F421	28	1	None	None	GUT1	S1	1B.1	BLM_S-Sensitive	Alkali playa, Meadow & seep, Wetland
<i>Athene cunicularia</i>	burrowing owl	Birds	ABNSB10010	2011	13	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crowscale	Dicots	PDCHE040C2	16	5	Endangered	None	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	Dicots	PDCHE041T1	26	1	None	None	G5T1	S1	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal scrub
<i>Batrachoseps gabrieli</i>	San Gabriel slender salamander	Amphibians	AAAAD02110	8	1	None	None	G2G3	S2S3	null	IUCN_DD-Data Deficient, USFS_S-Sensitive	Talus slope
<i>Berberis nevinii</i>	Nevin's barberry	Dicots	PDBER060A0	32	5	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub
<i>Bombus crotchii</i>	Crotch bumble bee	Insects	IIHYM24480	437	16	None	Candidate Endangered	G2	S2	null	IUCN_EN-Endangered	null
<i>Bombus morrisoni</i>	Morrison bumble bee	Insects	IIHYM24460	86	1	None	None	G3	S1S2	null	IUCN_VU-Vulnerable	null
<i>Bombus pensylvanicus</i>	American bumble bee	Insects	IIHYM24260	304	2	None	None	G3G4	S2	null	IUCN_VU-Vulnerable	Coastal prairie, Great Basin grassland, Valley & foothill grassland
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	Monocots	PMLIL0C050	141	2	Threatened	Endangered	G2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
<i>Buteo regalis</i>	ferruginous hawk	Birds	ABNKC19120	107	1	None	None	G4	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Great Basin grassland, Great Basin scrub, Pinon & juniper woodlands, Valley & foothill grassland
<i>Buteo swainsoni</i>	Swainson's hawk	Birds	ABNKC19070	2561	2	None	Threatened	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	Monocots	PMLIL0D122	111	4	None	None	G3T2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara	Chaparral, Lower montane coniferous forest, Meadow & seep



											Botanic Garden, USFS_S-Sensitive	
Calochortus plummerae	Plummer's mariposa-lily	Monocots	PMLIL0D150	230	24	None	None	G4	S4	4.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley & foothill grassland
Canyon Live Oak Ravine Forest	Canyon Live Oak Ravine Forest	Riparian	CTT61350CA	50	1	None	None	G3	S3.3	null	null	Riparian forest
Carex comosa	bristly sedge	Monocots	PMCYP032Y0	31	1	None	None	G5	S2	2B.1	IUCN_LC-Least Concern	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill grassland, Wetland
Castilleja cinerea	ash-gray paintbrush	Dicots	PDSCR0D0H0	53	1	Threatened	None	G1G2	S1S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Mojavean desert scrub, Pavement plain, Pinon & juniper woodlands, Upper montane coniferous forest
Castilleja lasiorhyncha	San Bernardino Mountains owl's-clover	Dicots	PDSCR0D410	46	7	None	None	G2?	S2?	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Meadow & seep, Pavement plain, Riparian woodland, Upper montane coniferous forest, Wetland
Catostomus santaanae	Santa Ana sucker	Fish	AFCJC02190	28	3	Threatened	None	G1	S1	null	AFS_TH-Threatened, IUCN_EN-Endangered	Aquatic, South coast flowing waters
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	PDAST4R0R4	137	17	None	None	G3G4T2	S2	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Meadow & seep, Riparian woodland, Valley & foothill grassland, Wetland
Ceratochrysis longimala	Desert cuckoo wasp	Insects	IIHYM71040	2	1	None	None	G1	S1	null	null	null
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	Mammals	AMAFD05031	101	25	None	None	G5T3T4	S3S4	null	null	Chaparral, Coastal scrub
Charina umbratica	southern rubber boa	Reptiles	ARADA01011	94	22	None	Threatened	G2G3	S2	null	IUCN_VU-Vulnerable, USFS_S-Sensitive	Meadow & seep, Riparian forest, Riparian woodland, Upper montane coniferous forest, Wetland
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Dicots	PDSCR0J0C2	26	1	Endangered	Endangered	G4?T1	S1	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes, Marsh & swamp, Salt marsh, Wetland
Chorizanthe parryi var. parryi	Parry's spineflower	Dicots	PDPGN040J2	150	29	None	None	G3T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Dicots	PDPGN040Z1	59	1	None	None	G4T3	S3	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture, USFS_S-Sensitive	Coastal scrub, Mojavean desert scrub, Pinon & juniper woodlands

<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Birds	ABNRB02022	165	3	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, USFS_S-Sensitive	Riparian forest
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	Reptiles	ARACD01031	8	1	None	None	G5T5	S1S2	null	CDFW_SSC-Species of Special Concern	Chaparral, Coastal scrub
<i>Crotalus ruber</i>	red-diamond rattlesnake	Reptiles	ARADE02090	192	9	None	None	G4	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Mojavean desert scrub, Sonoran desert scrub
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	Dicots	PDCUS01111	6	1	None	None	G5T4?	SH	2B.2	null	Marsh & swamp, Wetland
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	Reptiles	ARADB10015	14	3	None	None	G5T2T3	S2?	null	USFS_S-Sensitive	null
<i>Dipterona californica</i>	California dipterona caddisfly	Insects	IITRI23010	2	1	None	None	G1G2	S1	null	null	Aquatic
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	Mammals	AMAFD03143	81	28	Endangered	Candidate Endangered	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Coastal scrub
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	Mammals	AMAFD03100	226	35	Threatened	Threatened	G2	S3	null	IUCN_VU-Vulnerable	Coastal scrub, Valley & foothill grassland
<i>Dodecahema leptoceras</i>	slender-horned spineflower	Dicots	PDPGN0V010	42	9	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal scrub
<i>Elanus leucurus</i>	white-tailed kite	Birds	ABNKC06010	184	3	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
<i>Empidonax traillii eximius</i>	southwestern willow flycatcher	Birds	ABPAE33043	70	5	Endangered	Endangered	G5T2	S3	null	null	Riparian woodland
<i>Emys marmorata</i>	western pond turtle	Reptiles	ARAAD02030	1559	1	Proposed Threatened	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
<i>Eremophila alpestris actia</i>	California horned lark	Birds	ABPAT02011	94	4	None	None	G5T4Q	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marine intertidal & splash zone communities, Meadow & seep
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	Dicots	PDPLM03035	31	25	Endangered	Endangered	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Coastal scrub
<i>Euchloe hyantis andrewsi</i>	Andrew's marble butterfly	Insects	IILEPA5032	6	4	None	None	G4G5T1	S2	null	null	Lower montane coniferous forest
<i>Eugnosta busckana</i>	Busck's gallmoth	Insects	IILEM2X090	15	3	None	None	G1G3	S2S3	null	null	Coastal dunes, Coastal scrub
<i>Eumops perotis californicus</i>	western mastiff bat	Mammals	AMACD02011	296	6	None	None	G4G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
<i>Euphydryas editha quino</i>	quino checkerspot butterfly	Insects	IILEPK405L	186	2	Endangered	None	G4G5T1T2	S1S2	null	null	Chaparral, Coastal scrub

<i>Falco columbarius</i>	merlin	Birds	ABNKD06030	37	2	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
<i>Fimbristylis thermalis</i>	hot springs fimbriatilis	Monocots	PMCYP0B0N0	19	1	None	None	G4	S1S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Wetland
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	Dicots	PDRUB0N0E6	12	1	None	None	G5T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Lower montane coniferous forest
<i>Gila orcuttii</i>	arroyo chub	Fish	AFCJB13120	49	2	None	None	G2	S2	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, South coast flowing waters
<i>Glaucomys oregonensis californicus</i>	San Bernardino flying squirrel	Mammals	AMAFB09021	12	5	None	None	G5T1T2	S1S2	null	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Broadleaved upland forest, Lower montane coniferous forest
<i>Haliaeetus leucocephalus</i>	bald eagle	Birds	ABNKC10010	333	3	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive	Lower montane coniferous forest, Oldgrowth
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	Dicots	PDAST4N102	7	1	None	None	G5TX	SX	1A	null	Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
<i>Heuchera parishii</i>	Parish's alumroot	Dicots	PDSAX0E1F0	70	5	None	None	G3	S3	1B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Alpine boulder & rock field, Limestone, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	Dicots	PDR0S0W045	103	1	None	None	G4T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub
<i>Icteria virens</i>	yellow-breasted chat	Birds	ABPBX24010	101	3	None	None	G5	S4	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
<i>Imperata brevifolia</i>	California satintail	Monocots	PMPOA3D020	32	4	None	None	G3	S3	2B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Coastal scrub, Meadow & seep, Mojavean desert scrub, Riparian scrub, Wetland
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	silver-haired ivesia	Dicots	PDR0S0X021	41	1	None	None	G2T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Meadow & seep, Pavement plain, Upper montane coniferous forest
<i>Lanius ludovicianus</i>	loggerhead shrike	Birds	ABPBR01030	110	3	None	None	G4	S4	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Riparian woodland, Sonoran desert scrub
<i>Lasiurus xanthinus</i>	western yellow bat	Mammals	AMACC05070	58	8	None	None	G4G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Desert wash

<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	Dicots	PDAST5L0A1	111	7	None	None	G4T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Alkali playa, Marsh & swamp, Salt marsh, Vernal pool, Wetland
<i>Laterallus jamaicensis coturniculus</i>	California black rail	Birds	ABNME03041	304	2	None	Threatened	G3T1	S2	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_EN-Endangered	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	Dicots	PDBRA1M114	142	9	None	None	G5T3	S3	4.3	null	Chaparral, Coastal scrub
<i>Leptonycteris yerbabuena</i>	lesser long-nosed bat	Mammals	AMACB03030	2	1	Delisted	None	G3	S1	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Mojavean desert scrub, Sonoran desert scrub, Upper Sonoran scrub
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	Mammals	AMAEB03051	103	12	None	None	G5T3T4	S3S4	null	null	Coastal scrub
<i>Lilium parryi</i>	lemon lily	Monocots	PMLIL1A0J0	160	16	None	None	G3	S3	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Lower montane coniferous forest, Meadow & seep, Riparian forest, Upper montane coniferous forest, Wetland
<i>Lycium parishii</i>	Parish's desert-thorn	Dicots	PDSOL0G0D0	21	1	None	None	G4	S1	2B.3	SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Coastal scrub, Sonoran desert scrub
<i>Malacothamnus parishii</i>	Parish's bush-mallow	Dicots	PDMAL0Q0C0	1	1	None	None	GXQ	SX	1A	null	Chaparral, Coastal scrub
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	Dicots	PDLAM180E1	41	5	None	None	G5T3	S3	1B.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley & foothill grassland
<i>Monardella pringlei</i>	Pringle's monardella	Dicots	PDLAM180J0	2	1	None	None	GX	SX	1A	null	Coastal scrub
<i>Nama stenocarpa</i>	mud nama	Dicots	PDHYD0A0H0	22	1	None	None	G4G5	S1S2	2B.2	null	Marsh & swamp, Wetland
<i>Nasturtium gambelii</i>	Gambel's water cress	Dicots	PDBRA270V0	13	1	Endangered	Threatened	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
<i>Neolarra alba</i>	white cuckoo bee	Insects	IIHYM81010	8	2	None	None	GH	SH	null	null	null
<i>Neotamias speciosus speciosus</i>	lodgepole chipmunk	Mammals	AMAFB02172	24	3	None	None	G4T3T4	S2	null	null	Chaparral, Upper montane coniferous forest
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	Mammals	AMAFF08041	132	5	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Coastal scrub
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	Mammals	AMACD04010	90	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Joshua tree woodland, Pinon & juniper woodlands, Riparian scrub, Sonoran desert scrub
<i>Oncorhynchus mykiss irideus</i> pop. 10	steelhead - southern California DPS	Fish	AFCHA0209J	19	1	Endangered	Candidate Endangered	G5T1Q	S1	null	AFS_EN-Endangered	Aquatic, South coast flowing waters
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	Mammals	AMAFF06022	28	3	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern	Chenopod scrub
<i>Packera bernardina</i>	San Bernardino ragwort	Dicots	PDAST8H0E0	35	1	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Meadow & seep, Pavement plain, Upper montane coniferous forest, Wetland



Pelazoneuron puberulum var. sonorensis	Sonoran maiden fern	Ferns	PPTHE05192	27	1	None	None	G5T3	S2	2B.2	USFS_S-Sensitive	Meadow & seep, Wetland
Perideridia parishii ssp. parishii	Parish's yampah	Dicots	PDAP11N0C2	37	8	None	None	G4T3T4	S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Lower montane coniferous forest, Meadow & seep, Upper montane coniferous forest
Perognathus alticola alticola	white-eared pocket mouse	Mammals	AMAFD01081	3	3	None	None	G2TH	SH	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Lower montane coniferous forest, Mojavean desert scrub, Pinon & juniper woodlands
Perognathus longimembris brevinasus	Los Angeles pocket mouse	Mammals	AMAFD01041	70	18	None	None	G5T2	S1S2	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	824	23	None	None	G4	S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Plegadis chihi	white-faced ibis	Birds	ABNGE02020	20	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marsh & swamp, Wetland
Polioptila californica californica	coastal California gnatcatcher	Birds	ABPBJ08081	1087	14	Threatened	None	G4G5T3Q	S2	null	CDFW_SSC-Species of Special Concern	Coastal bluff scrub, Coastal scrub
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1764	1	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Rana muscosa	southern mountain yellow-legged frog	Amphibians	AAABH01330	186	5	Endangered	Endangered	G1	S2	null	CDFW_WL-Watch List, IUCN_EN-Endangered, USFS_S-Sensitive	Aquatic
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	Insects	IIDIP05021	36	20	Endangered	None	G1T1	S1	null	null	Interior dunes
Rhinichthys osculus ssp. 8	Santa Ana speckled dace	Fish	AFCJB3705K	13	3	None	None	G5T1	S1	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, South coast flowing waters
Ribes divaricatum var. parishii	Parish's gooseberry	Dicots	PDGRO020F3	5	1	None	None	G5TX	SX	1A	null	Riparian woodland
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	Scrub	CTT32720CA	30	4	None	None	G1	S1.1	null	null	Coastal scrub
Salvadora hexalepis virgulata	coast patch-nosed snake	Reptiles	ARADB30033	34	2	None	None	G5T4	S3	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Schoenus nigricans	black bog-rush	Monocots	PMCYP0P010	13	1	None	None	G4	S2	2B.2	IUCN_LC-Least Concern, USFS_S-Sensitive	Marsh & swamp, Wetland

Senecio aphanactis	chaparral ragwort	Dicots	PDAST8H060	98	2	None	None	G3	S2	2B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	Chaparral, Cismontane woodland, Coastal scrub
Setophaga petechia	yellow warbler	Birds	ABPBX03010	78	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	Dicots	PDMAL110A3	24	1	None	Rare	G3T1	S1	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest
Sidalcea malviflora ssp. dolosa	Bear Valley checkerbloom	Dicots	PDMAL110FH	18	1	None	None	G5T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Lower montane coniferous forest, Meadow & seep, Riparian woodland, Upper montane coniferous forest, Wetland
Sidalcea neomexicana	salt spring checkerbloom	Dicots	PDMAL110J0	30	4	None	None	G4	S2	2B.2	USFS_S-Sensitive	Alkali playa, Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Wetland
Sidalcea pedata	bird-foot checkerbloom	Dicots	PDMAL110L0	24	1	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Meadow & seep, Pavement plain, Wetland
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	2	None	None	G4	S4	null	null	Riparian forest
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	3	None	None	G3	S3.2	null	null	Riparian forest
Southern Mixed Riparian Forest	Southern Mixed Riparian Forest	Riparian	CTT61340CA	14	1	None	None	G2	S2.1	null	null	Riparian forest
Southern Riparian Forest	Southern Riparian Forest	Riparian	CTT61300CA	20	1	None	None	G4	S4	null	null	Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	Riparian	CTT63300CA	56	2	None	None	G3	S3.2	null	null	Riparian scrub
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	16	None	None	G4	S4	null	null	Riparian woodland
Southern Willow Scrub	Southern Willow Scrub	Riparian	CTT63320CA	45	1	None	None	G3	S2.1	null	null	Riparian scrub
Spea hammondi	western spadefoot	Amphibians	AAABF02020	1444	38	Proposed Threatened	None	G2G3	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Sphenopholis obtusata	prairie wedge grass	Monocots	PMPOA5T030	19	2	None	None	G5	S2	2B.2	null	Cismontane woodland, Meadow & seep, Wetland
Spinus lawrencei	Lawrence's goldfinch	Birds	ABPBY06100	4	1	None	None	G3G4	S4	null	IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Chaparral, Pinon & juniper woodlands, Riparian woodland

Streptanthus bernardinus	Laguna Mountains jewelflower	Dicots	PDBRA2G060	22	7	None	None	G3G4	S3S4	4.3	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest
Streptanthus campestris	southern jewelflower	Dicots	PDBRA2G0B0	73	4	None	None	G3	S3	1B.3	BLM_S-Sensitive, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Chaparral, Lower montane coniferous forest, Pinon & juniper woodlands
Streptocephalus woottoni	Riverside fairy shrimp	Crustaceans	ICBRA07010	83	2	Endangered	None	G1G2	S2	null	IUCN_EN-Endangered	Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Symphyotrichum defoliatum	San Bernardino aster	Dicots	PDASTE80C0	102	3	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_CRES-San Diego Zoo CRES Native Gene Seed Bank, USFS_S-Sensitive	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Taxidea taxus	American badger	Mammals	AMAJF04010	645	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, lone formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis hammondi	two-striped gartersnake	Reptiles	ARADB36160	184	10	None	None	G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-	Marsh & swamp, Riparian scrub, Riparian

											Least Concern, USFS_S-Sensitive	woodland, Wetland
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Dicots	PDAST9F031	12	1	None	None	G4T3	S1	2B.1	null	Marsh & swamp, Meadow & seep, Riparian forest, Vernal pool, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	505	29	Endangered	Endangered	G5T2	S3	null	null	Riparian forest, Riparian scrub, Riparian woodland





CNPS Rare Plant Inventory



Search Results

87 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3411712:3411723:3411722:3411721:3411711:3311781:3311782:3311783:3411713]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
<a href="#"><i>Abronia villosa</i></a> <a href="#"><i>var. aurita</i></a>	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	None	None	G5T2?	S2	1B.1		2001-01-01	 © 2011 Aaron E. Sims
<a href="#"><i>Acanthoscyphus parishii</i></a> <a href="#"><i>var. parishii</i></a>	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes	2007-04-05	 © 2014 Keir Morse
<a href="#"><i>Allium howellii</i></a> <a href="#"><i>var. clokeyi</i></a>	Mt. Pinos onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4T2	S2	1B.3	Yes	1974-01-01	 © 2016 Keir Morse
<a href="#"><i>Allium marvinii</i></a>	Yucaipa onion	Alliaceae	perennial bulbiferous herb	Apr-May	None	None	G1	S1	1B.2	Yes	2001-01-01	 © 2013 Keir Morse
<a href="#"><i>Androsace elongata</i></a> <a href="#"><i>ssp. acuta</i></a>	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2		1994-01-01	 © 2008 Aaron Schusteff
<a href="#"><i>Arenaria paludicola</i></a>	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1		1984-01-01	No Photo Available
<a href="#"><i>Artemisia palmeri</i></a>	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		1974-01-01	No Photo Available
<a href="#"><i>Asplenium vespertinum</i></a>	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available

<a href="#"><i>Monardella macrantha</i> ssp. <i>hallii</i></a>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974-01-01	No Photo Available
<a href="#"><i>Monardella pringlei</i></a>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
<a href="#"><i>Muhlenbergia californica</i></a>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994-01-01	No Photo Available
<a href="#"><i>Muilla coronata</i></a>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar-Apr(May)	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<a href="#"><i>Nama stenocarpa</i></a>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994-01-01	No Photo Available
<a href="#"><i>Nasturtium gambelii</i></a>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980-01-01	No Photo Available
<a href="#"><i>Packera bernardina</i></a>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
<a href="#"><i>Pelazoneuron puberulum</i> var. <i>sonorense</i></a>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994-01-01	No Photo Available
<a href="#"><i>Perideridia parishii</i> ssp. <i>parishii</i></a>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4S2		2B.2		1974-01-01	No Photo Available
<a href="#"><i>Phacelia mohavensis</i></a>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available
<a href="#"><i>Phacelia stellaris</i></a>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
<a href="#"><i>Piperia leptopetala</i></a>	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001-01-01	No Photo Available
<a href="#"><i>Quercus engelmannii</i></a>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<a href="#"><i>Ribes divaricatum</i> var. <i>parishii</i></a>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988-01-01	No Photo Available
<a href="#"><i>Romneya coulteri</i></a>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
<a href="#"><i>Rupertia rigida</i></a>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974-01-01	No Photo Available


<a href="#"><u>Caulanthus simulans</u></a>	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	None	None	G4	S4	4.2	Yes	1974-01-01	No Photo Available
<a href="#"><u>Centromadia pungens ssp. laevis</u></a>	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	Yes	1994-01-01	No Photo Available
<a href="#"><u>Chloropyron maritimum ssp. maritimum</u></a>	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974-01-01	No Photo Available
<a href="#"><u>Chorizanthe leptotheca</u></a>	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994-01-01	No Photo Available
<a href="#"><u>Chorizanthe parryi var. parryi</u></a>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994-01-01	 © 2012 Keir Morse
<a href="#"><u>Chorizanthe xanti var. leucotheca</u></a>	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G4T3	S3	1B.2	Yes	1994-01-01	No Photo Available
<a href="#"><u>Convolvulus simulans</u></a>	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
<a href="#"><u>Cuscuta obtusiflora var. glandulosa</u></a>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011-08-24	No Photo Available
<a href="#"><u>Deinandra paniculata</u></a>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov	None	None	G4	S4	4.2		2001-01-01	No Photo Available
<a href="#"><u>Diplacus clevelandii</u></a>	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980-01-01	 © 2020 W. Juergen Schrenk
<a href="#"><u>Dodecahema leptoceras</u></a>	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
<a href="#"><u>Eriastrum densifolium ssp. sanctorum</u></a>	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	FE	CE	G4T1	S1	1B.1	Yes	1980-01-01	No Photo Available
<a href="#"><u>Eriophyllum lanatum var. obovatum</u></a>	southern Sierra woolly sunflower	Asteraceae	perennial herb	Jun-Jul	None	None	G5T4	S4	4.3	Yes	1974-01-01	No Photo Available
<a href="#"><u>Erythranthe exigua</u></a>	San Bernardino Mountains monkeyflower	Phrymaceae	annual herb	May-Jul	None	None	G2	S2	1B.2		1974-01-01	No Photo Available

<i>Fimbristylis thermalis</i>	hot springs fimbriatylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980-01-01	No Photo Available
<i>Frasera neglecta</i>	pine green-gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980-01-01	No Photo Available
<i>Fritillaria pinetorum</i>	pine fritillary	Liliaceae	perennial bulbiferous herb	May-Jul(Sep)	None	None	G4	S4	4.3	Yes	2001-01-01	 © 2008 Steve Matson
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G5T2	S2	1B.2	Yes	1974-01-01	 © 2013 Keir Morse
<i>Galium johnstonii</i>	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974-01-01	No Photo Available
<i>Heuchera caespitosa</i>	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Heuchera parishii</i>	Parish's alumroot	Saxifragaceae	perennial rhizomatous herb	Jun-Aug	None	None	G3	S3	1B.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Hordeum intercedens</i>	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001-01-01	 © 2008 Tony Morosco
<i>Hulsea vestita</i> ssp. <i>parryi</i>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994-01-01	 © 2015 Keir Morse



<a href="#"><i>Imperata brevifolia</i></a>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
<a href="#"><i>Ivesia argyrocoma</i></a> var. <a href="#"><i>argyrocoma</i></a>	silver-haired ivesia	Rosaceae	perennial herb	Jun-Aug	None	None	G2T2	S2	1B.2	Yes	1974-01-01	 © 2015 Keir Morse
<a href="#"><i>Juglans californica</i></a>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994-01-01	 © 2020 Zoya Akulova
<a href="#"><i>Juncus duranii</i></a>	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2017 Keir Morse
<a href="#"><i>Lasthenia glabrata</i></a> ssp. <a href="#"><i>coulteri</i></a>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
<a href="#"><i>Lepidium virginicum</i></a> var. <a href="#"><i>robinsonii</i></a>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse
<a href="#"><i>Lilium humboldtii</i></a> ssp. <a href="#"><i>ocellatum</i></a>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980-01-01	 © 2008 Thomas Stoughton
<a href="#"><i>Lilium parryi</i></a>	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974-01-01	 © 2009 Thomas Stoughton
<a href="#"><i>Lycium parishii</i></a>	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	None	None	G4	S1	2B.3		1980-01-01	No Photo Available
<a href="#"><i>Malacothamnus parishii</i></a>	Parish's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jul	None	None	GXQ	SX	1A	Yes	1974-01-01	 © 2021 Keir Morse

<u><i>Monardella macrantha</i> ssp. <i>hallii</i></u>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974-01-01	No Photo Available
<u><i>Monardella pringlei</i></u>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
<u><i>Muhlenbergia californica</i></u>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994-01-01	No Photo Available
<u><i>Muilla coronata</i></u>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar-Apr(May)	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<u><i>Nama stenocarpa</i></u>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994-01-01	No Photo Available
<u><i>Nasturtium gambelii</i></u>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980-01-01	No Photo Available
<u><i>Packera bernardina</i></u>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
<u><i>Pelazoneuron puberulum</i> var. <i>sonorense</i></u>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994-01-01	No Photo Available
<u><i>Perideridia parishii</i> ssp. <i>parishii</i></u>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4S2		2B.2		1974-01-01	No Photo Available
<u><i>Phacelia mohavensis</i></u>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994-01-01	No Photo Available
<u><i>Phacelia stellaris</i></u>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
<u><i>Piperia leptopetala</i></u>	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001-01-01	No Photo Available
<u><i>Quercus engelmannii</i></u>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988-01-01	No Photo Available
<u><i>Ribes divaricatum</i> var. <i>parishii</i></u>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988-01-01	No Photo Available
<u><i>Romneya coulteri</i></u>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
<u><i>Rupertia rigida</i></u>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974-01-01	No Photo Available

<a href="#"><i>Schoenus nigricans</i></a>	black bog-rush	Cyperaceae	perennial herb	Aug-Sep	None	None	G4	S2	2B.2			2001-01-01	No Photo Available
<a href="#"><i>Senecio aphanactis</i></a>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2			1994-01-01	No Photo Available
<a href="#"><i>Senecio astephanus</i></a>	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes		2006-12-21	No Photo Available
<a href="#"><i>Sidalcea hickmanii ssp. parishii</i></a>	Parish's checkerbloom	Malvaceae	perennial herb	(May)Jun-Aug	None	CR	G3T1	S1	1B.2	Yes		1974-01-01	No Photo Available
<a href="#"><i>Sidalcea malviflora ssp. dolosa</i></a>	Bear Valley checkerbloom	Malvaceae	perennial herb	May-Aug	None	None	G5T2	S2	1B.2	Yes		2012-06-13	No Photo Available
<a href="#"><i>Sidalcea neomexicana</i></a>	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2			1994-01-01	No Photo Available
<a href="#"><i>Sidalcea pedata</i></a>	bird-foot checkerbloom	Malvaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes		1974-01-01	No Photo Available
<a href="#"><i>Sidotheca caryophylloides</i></a>	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes		1980-01-01	 ©2021 Keir Morse
<a href="#"><i>Sphenopholis obtusata</i></a>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2			1974-01-01	No Photo Available
<a href="#"><i>Streptanthus bernardinus</i></a>	Laguna Mountains jewelflower	Brassicaceae	perennial herb	May-Aug	None	None	G3G4	S3S4	4.3	Yes		1980-01-01	No Photo Available
<a href="#"><i>Streptanthus campestris</i></a>	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3			1994-01-01	No Photo Available
<a href="#"><i>Symphytotrichum defoliatum</i></a>	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes		2004-01-01	No Photo Available
<a href="#"><i>Trichocoronis wrightii var. wrightii</i></a>	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1			1988-01-01	No Photo Available
<a href="#"><i>Trichostema micranthum</i></a>	small-flowered bluecurls	Lamiaceae	annual herb	Jun-Sep	None	None	G4	S3	4.3			1974-01-01	No Photo Available

Showing 1 to 87 of 87 entries

## Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed 2 January 2024].

Attachment E  
**Exclusionary Fence Design**





# AMX48

Temporary & Permanent Wildlife Fencing

*Specification & Installation Guides*

LAST UPDATED MAY 2022

## **SUITABLE SPECIES**

- TURTLES (Large)
- LIZARDS (Large)
- FROGS
- SMALL MAMMALS

## **Contents**

**Basic Material Size & Features** pg.1

**Step by Step Installation** pg.3

**Fixing & Fastening** pg.6

**Free-standing** pg.10

**Attached** pg.14

**Specialised** pg.24

**Tender Document Descriptions** pg.30

# **Animex<sup>®</sup>**

# ● AMX 48

## Basic Material Size & Features

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

The length of each **AMX 48** section will vary depending on the material choice.

**AMX 48** dimensions based on Animex's optimal fencing materials.

**SCORED PLASTIC - PERFORATED & NON-PERFORATED**

*Temporary Applications (AMX-T)*

Thickness: 0.04in / 1mm  
Length: 60ft / 18.2m  
Weight: 50lbs / 23kg

*Semi-Permanent Applications (AMX-SP)*

Thickness: 0.08in / 2mm  
Length: 30ft / 9m  
Weight: 48lbs / 23kg

**PREFORMED METAL- PERFORATED & NON-PERFORATED**

*Permanent Applications (AMX-XP)*

Thickness: 0.08in / 2mm  
Length: 8ft / 2.4m  
Weight: 99lbs / 45kg

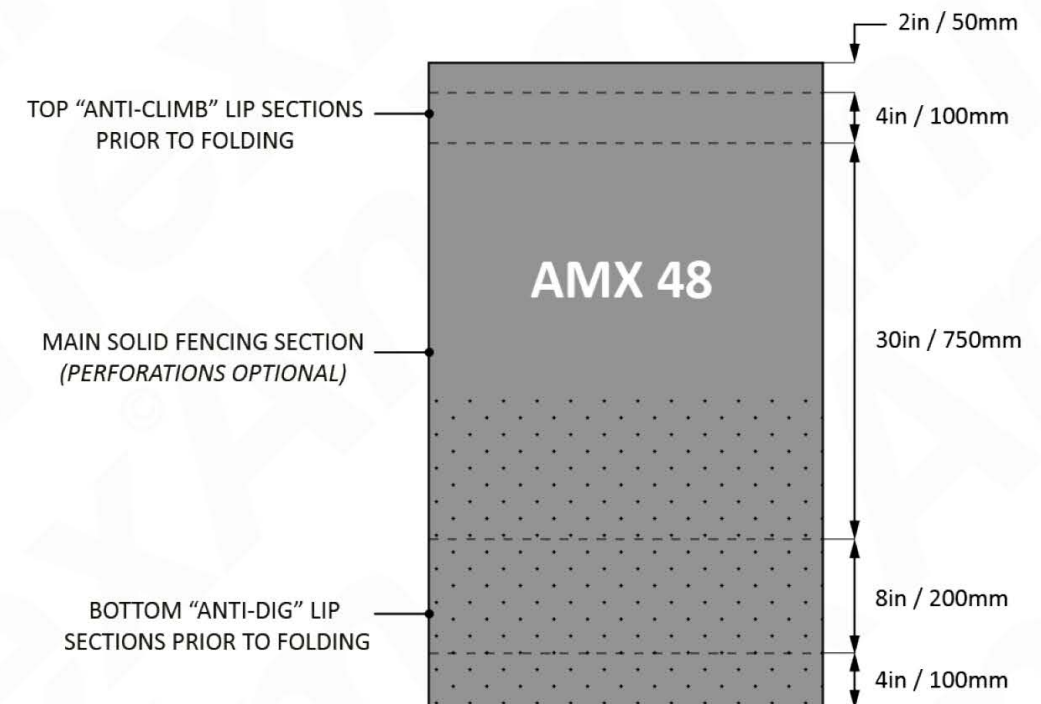
**AMX 48 INSTALLED ABOVE GROUND HEIGHT: 30in / 750mm**

**Notes:**

These dimensions are based on maximising the amount of material that can be shipped economically and manoeuvred on site in line with common health and safety guidelines.

Material may be shipped in sheets or rolls depending on their length.

Customised options for alternative **AMX48** barrier options are available from Animex® Fencing suppliers upon request. Other traditional and existing fencing materials including posts and wire etc can be obtained from local contractors.



# ● AMX 48

## Step-by-Step Installation

- 1) Clear vegetation along the fence line and work area.
- 2) Mark out the Animex fence line.
- 3) **Below Ground:** Excavate trench. Ensure the trench is level and clear of large clumps or rocks.  
**Above Ground:** Clear Ground. Ensure the ground is level and clear of large clumps or rocks.
- 4) **Free-Standing:** Lay out posts and roll out Animex barrier (Fold bottom lip if required).  
**Attached to existing fences:** Roll out Animex barrier along fence (Fold bottom lip if required).
- 5) Install posts at the back of the trench using manual or machine powered post driver (Install horizontal wire if required and secure to end braces).
- 6) Place the Animex fence material into the trench with the lips facing towards the area that animals will encounter the fence.
- 7) Fasten the Animex to posts, straining wire or existing fence starting at the top and work down.
- 8) When attaching rolls overlap them following details on installation drawing Pg7. A minimum of 4 ties should be used on any joins in the fence
- 9) Back fill the trench. Ensure the backfill is compact to eliminate gaps for animals to crawl through. Do the same on the back side of the fence.
- 10) Fasten the top lips and install any additional features such as one-way funnels or pitfall traps (if required).

### MATERIALS

#### Required

- Animex Fencing
- Animex Washers
- UV Resistant Zip-ties or Fencing Wire
- Fence Posts

#### Optional

- 12 Gauge Straining Wire
- Fence end braces & wire strainers
- Gripple Wire Joiners (or similar)
- Fence Post Safety Caps

### TOOLS & EQUIPMENT

#### Required

- Weed wacker / Whipper
- String Line & Marker Pain
- Box Cutter / Stanley Knife
- Trencher / Excavator
- Spade / Trench / Shovel
- Post Diver / Sledge Hammer
- Battery Powered Drill
- Spade Drill Bit 3/4 (20mm)
- Cutting Pliers

#### Optional

- Shear Attachment For Drill (Trim Fence)
- Battery Powered reciprocating Saw (Trim Posts)
- Drill Bit For Drainage Holes 1/8in (3mm)
- Gripple Tensioning Tool



# Fixings & Fastening Scorded Plastic HDPE

## AMX-T & AMX-SP

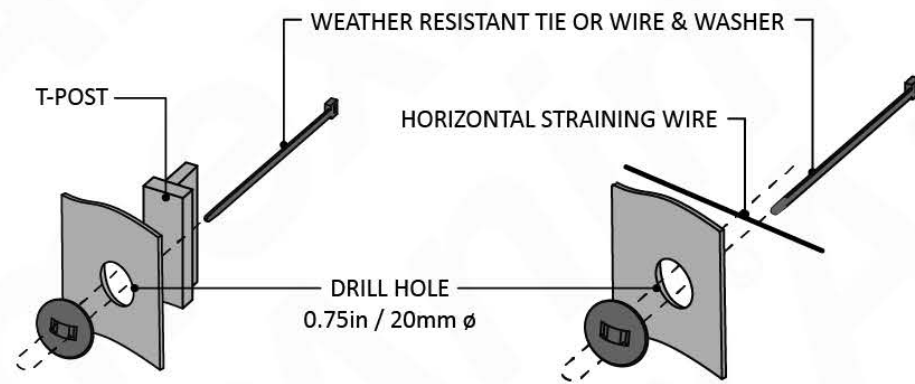
Pre-scored plastic (HDPE) sheets and rolls can expand in when installed in places where there are large fluctuations in temperature. You should therefore avoid hard fixing this material as it can cause buckling and even open up gaps at overlapped or joining sections.

We have prepared some illustrations to demonstrate the best ways to connect and fasten HDPE rolls and sheets.

This technique helps to reduce the chances of gaps opening up at the joins and allows the fencing to expand and contract freely.

Ensuring the trench is backfilled correctly and the earth is compacted tightly against both sides of the fence is also essential to ensure there are no gaps at ground level where animals will be encountering the fence.

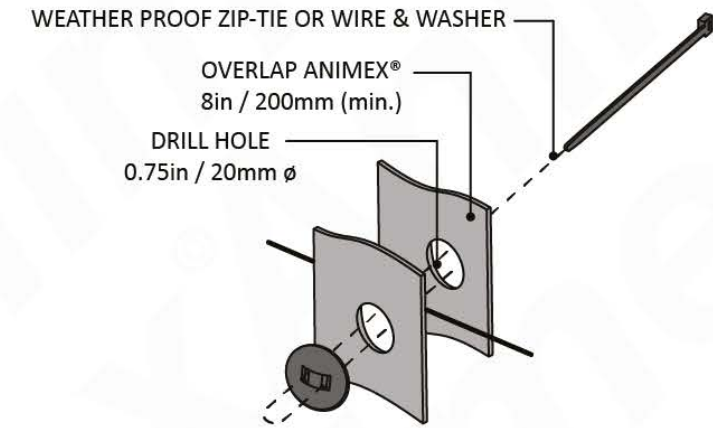
Joins should be made between posts and onto horizontal wire or horizontal parts of existing fences where possible.



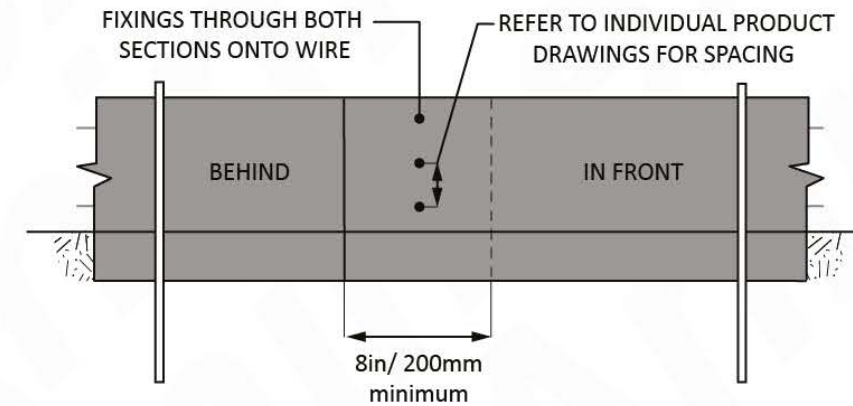
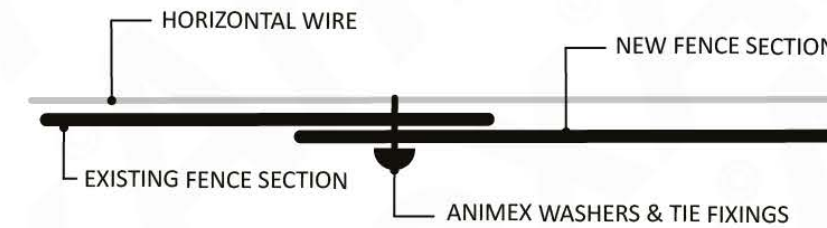
**ATTACH TO POSTS**  
NOT TO SCALE

**ATTACH TO WIRE**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**JOINING & OVERLAPPING SECTIONS**  
**NOT TO SCALE**





## Fixings & Fastening Preformed Metal

### AMX-XP

Preformed metal fencing is supplied in sections that are often custom made for your project.

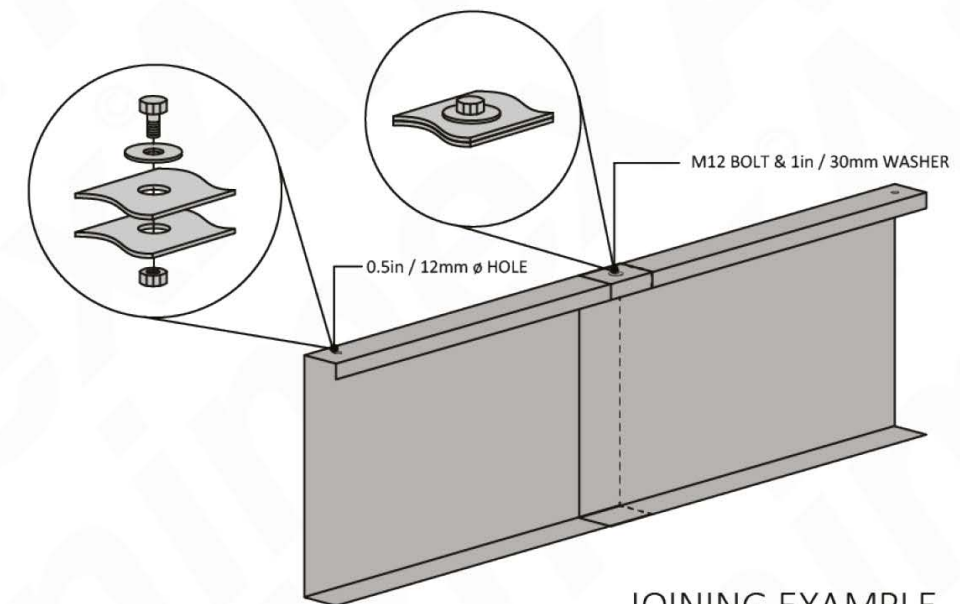
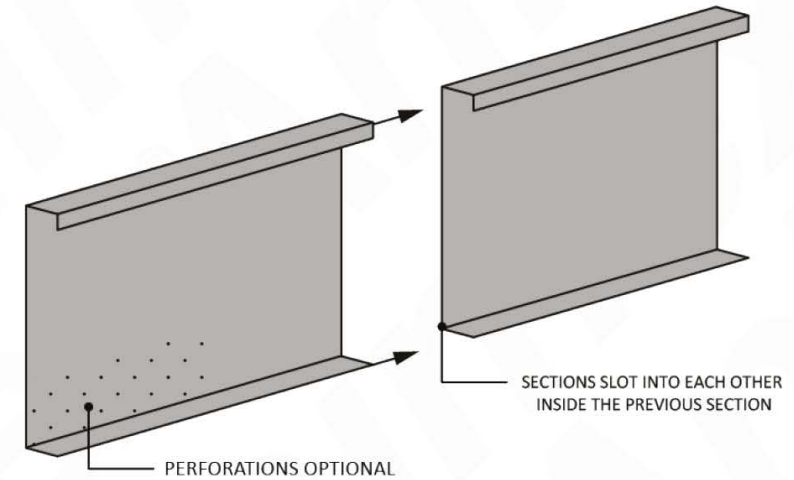
Each section slots inside the other and is then fastened by drilling holes through the overlapping sections and securing with bolt, nuts and washers.

End sections and turn-arounds will also be custom made per project and fitted on site.

Panels can be supplied with a power coating but this will increase costs and may need touch ups after installation.

#### NOTES:

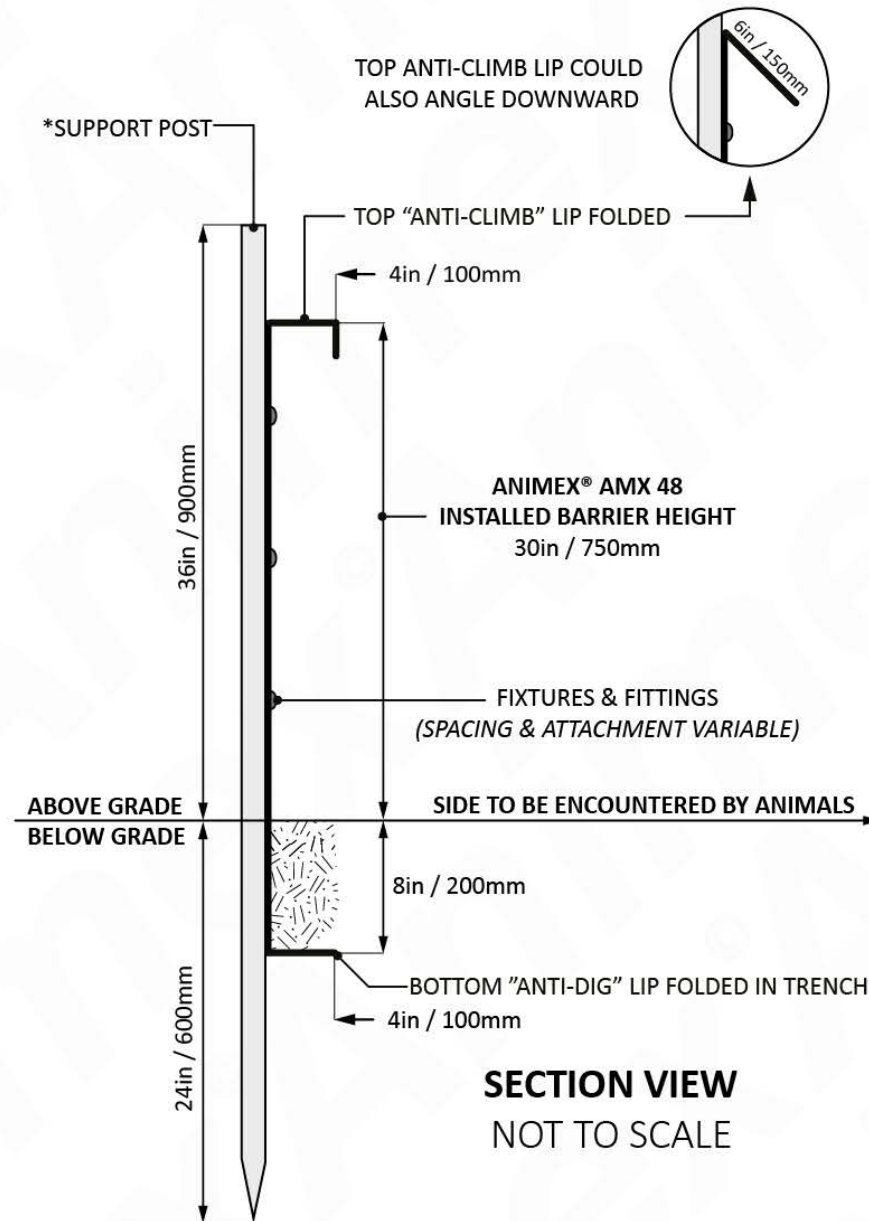
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



# AMX 48

## Free-standing Below Ground

AMX 48  
Free-standing Below Ground

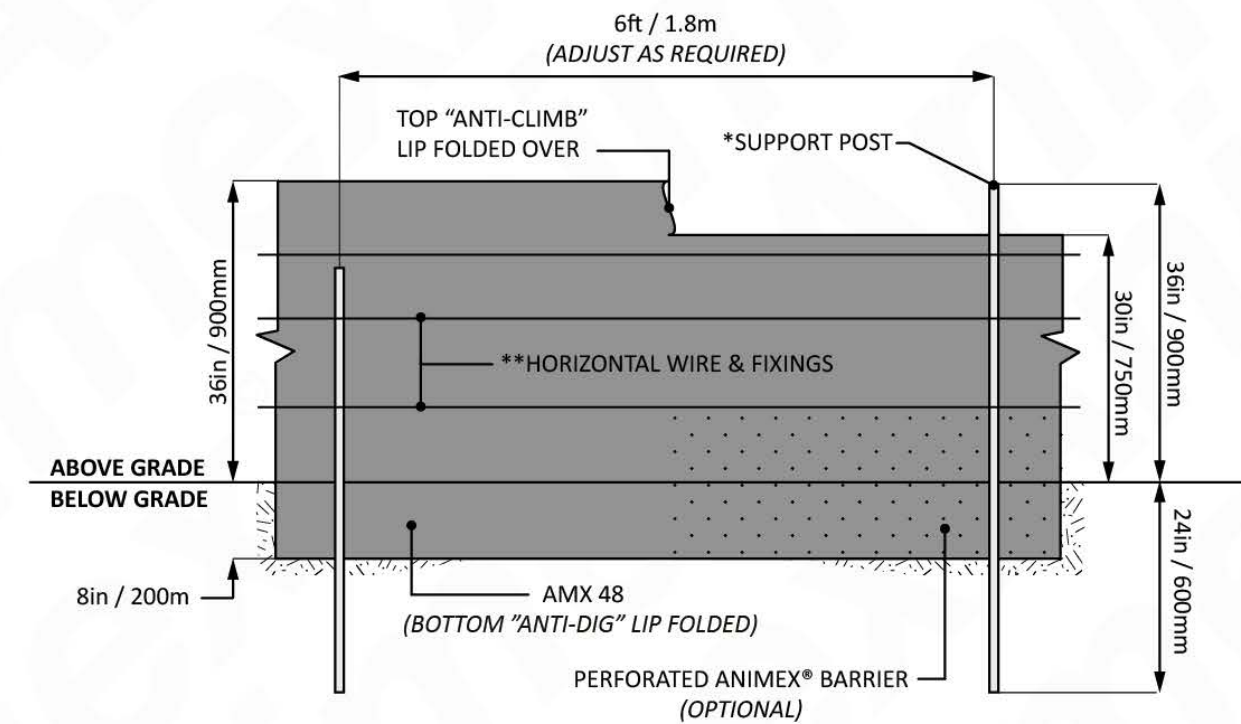


**NOTES:**  
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**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

\*SUPPORT POSTS & HORIZONTAL WIRE MAY NOT BE NEEDED FOR PREFORMED METAL (AMX-XP) FENCES

\*\*HORIZONTAL WIRE MAY NOT BE NEEDED FOR TEMPORARY (AMX-T) FENCES



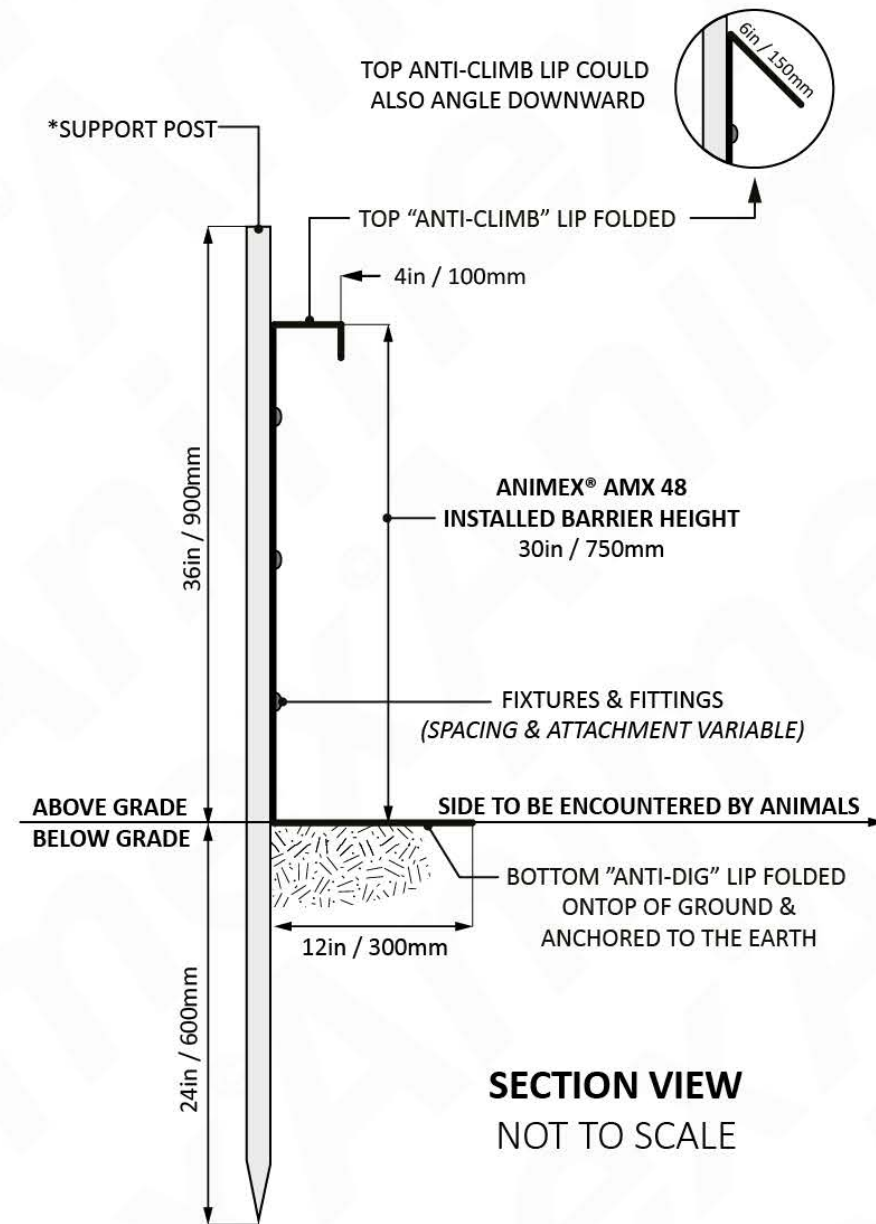
AMX 48  
Free-standing Below Ground



**AMX 48**  
Free-standing Above Ground

**AMX 48**  
Free-standing Above Ground

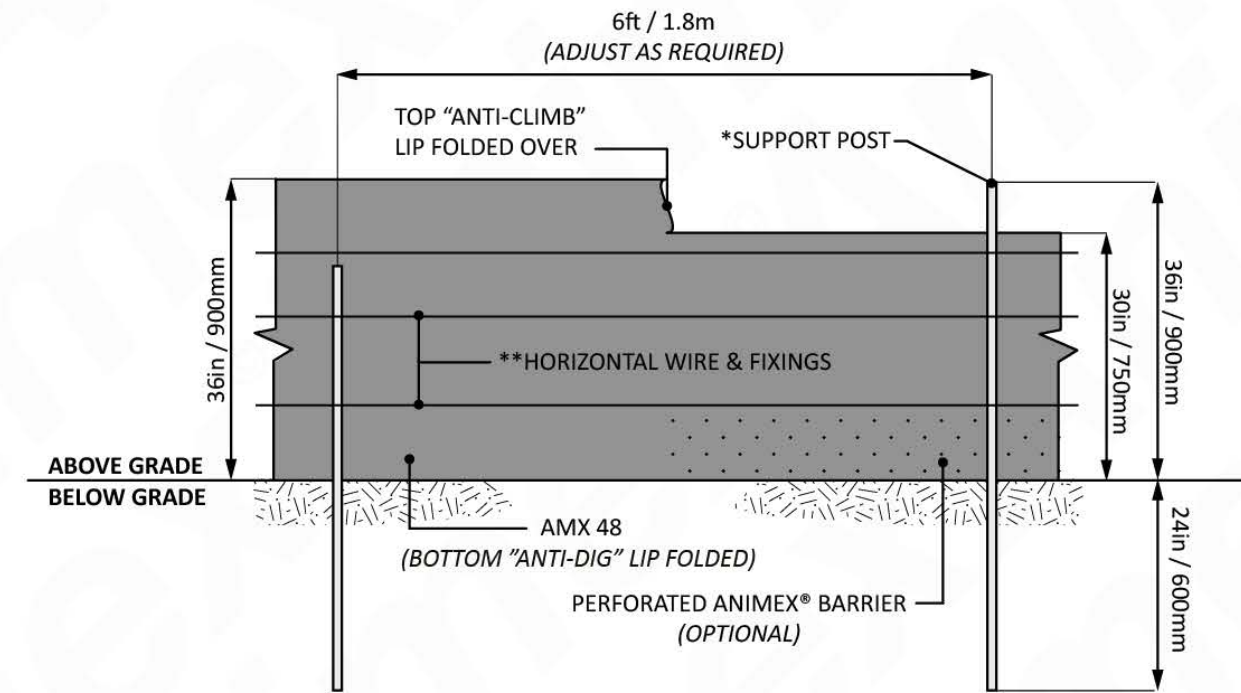
**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

**APPLY THIS ABOVE GROUND METHOD  
WHEN ATTACHING TO EXISTING  
FENCE TYPES AS WELL**

\*SUPPORT POSTS & HORIZONTAL WIRE MAY NOT BE NEEDED FOR PREFORMED METAL (AMX-XP) FENCES  
\*\*HORIZONTAL WIRE MAY NOT BE NEEDED FOR TEMPORARY (AMX-T) FENCES



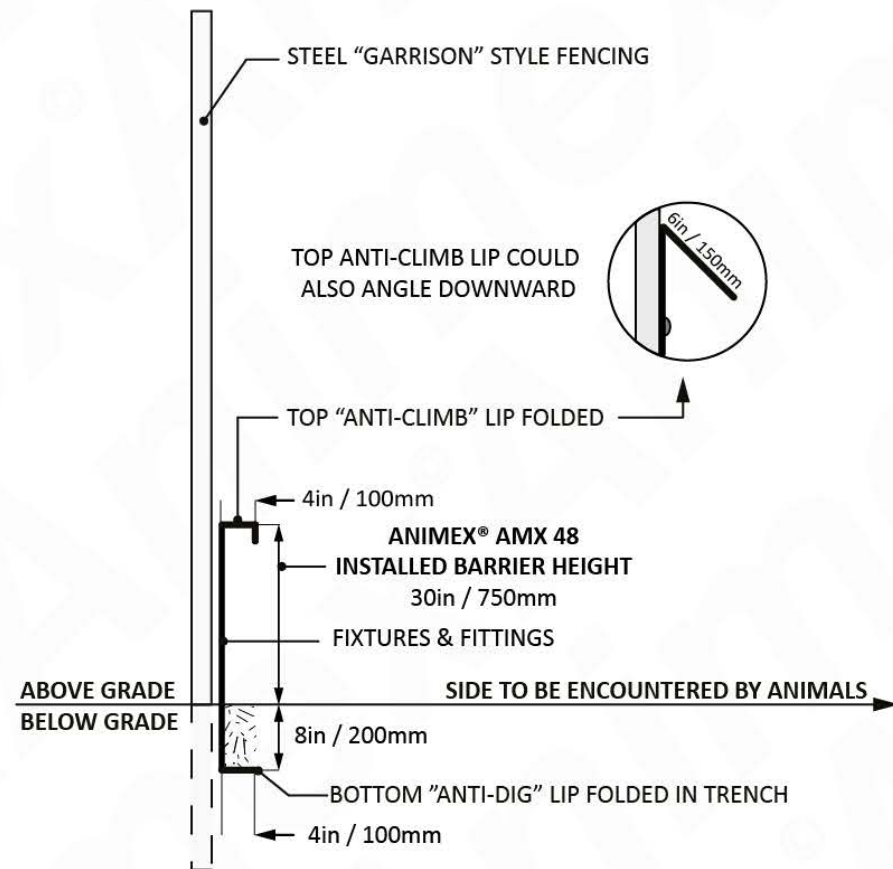
**AMX 48**  
Free-standing Above Ground



# AMX 48 Attached Garrison

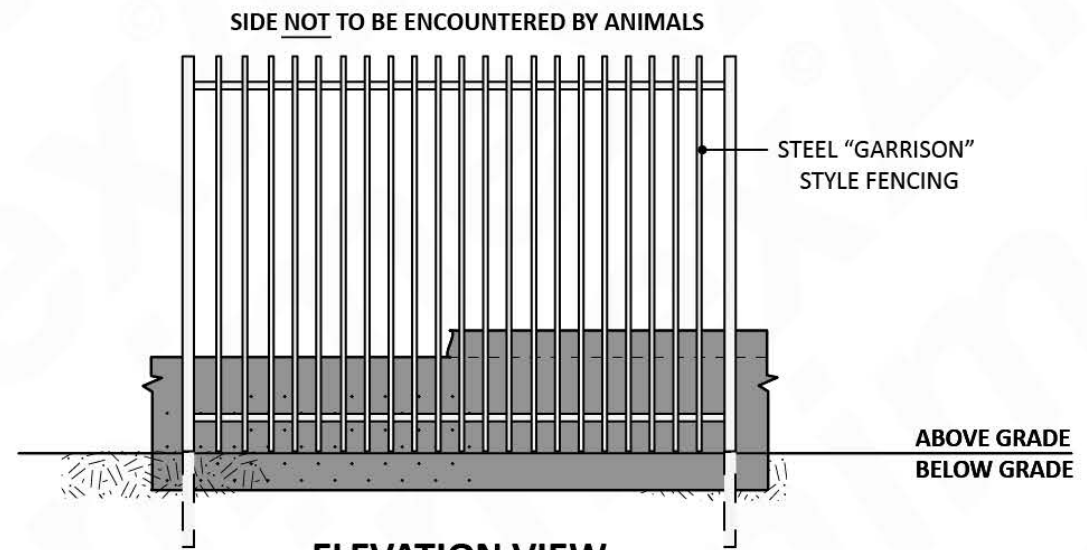
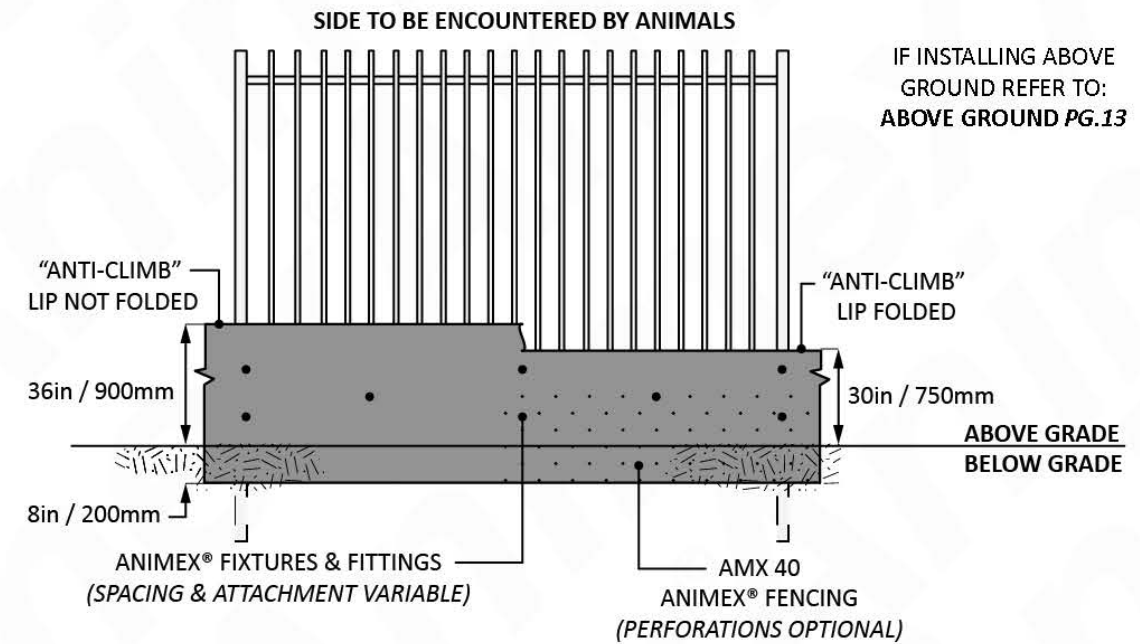
AMX 48  
Attached Garrison

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**SECTION VIEW**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

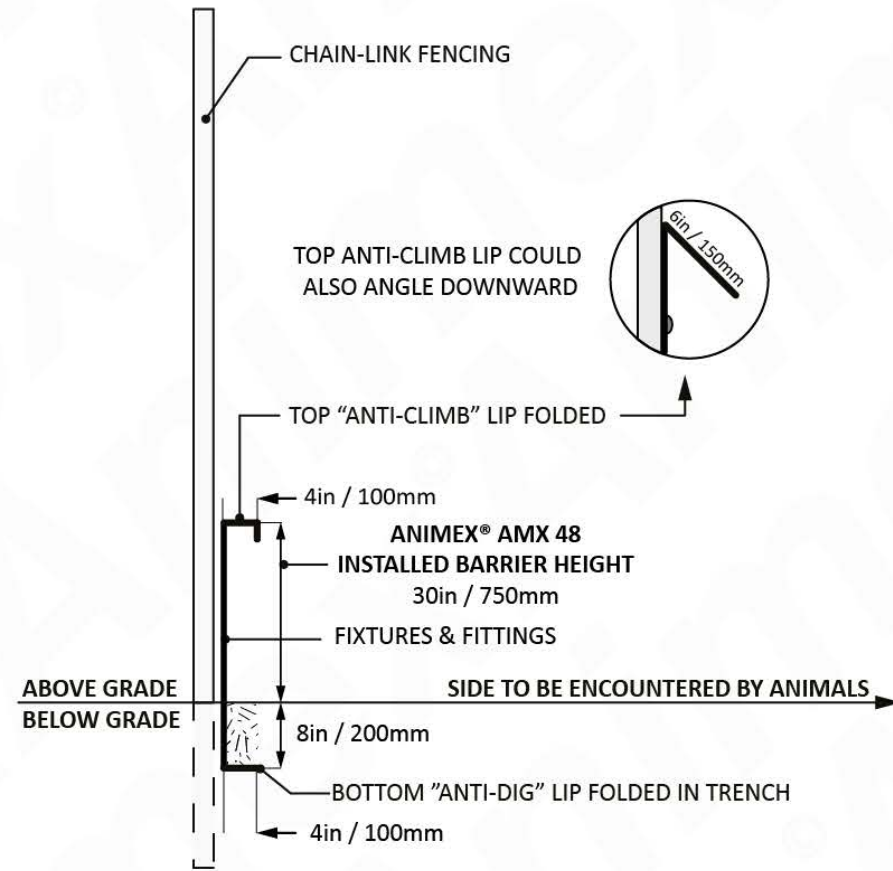


**ELEVATION VIEW**  
NOT TO SCALE

IF INSTALLING ABOVE  
GROUND REFER TO:  
ABOVE GROUND PG.13

AMX 48  
Attached Garrison

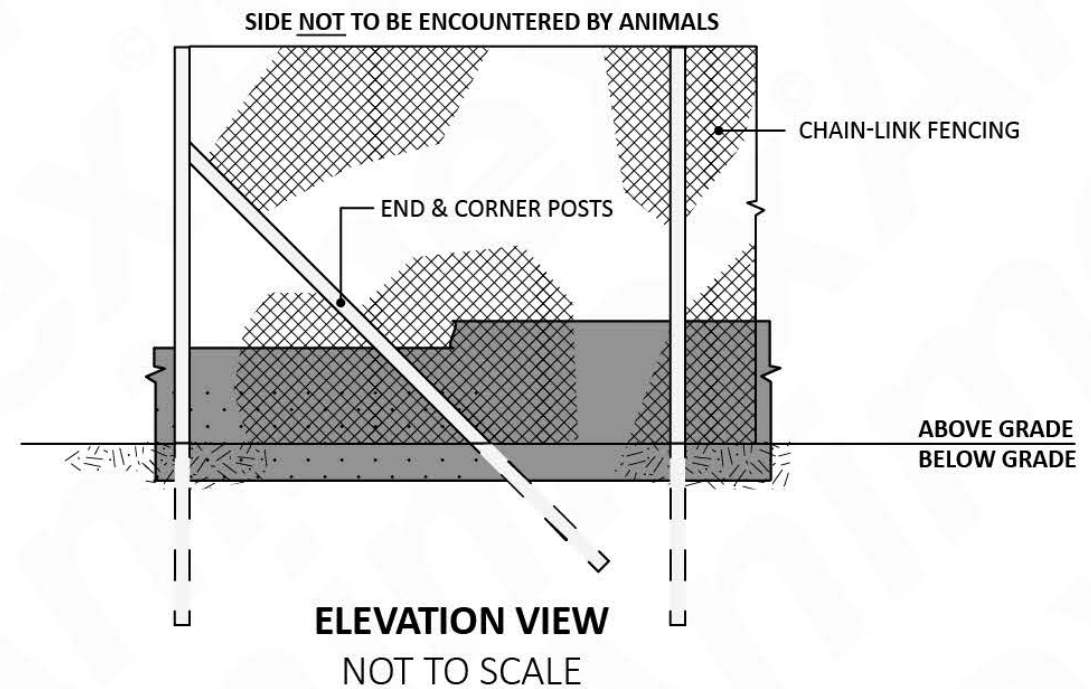
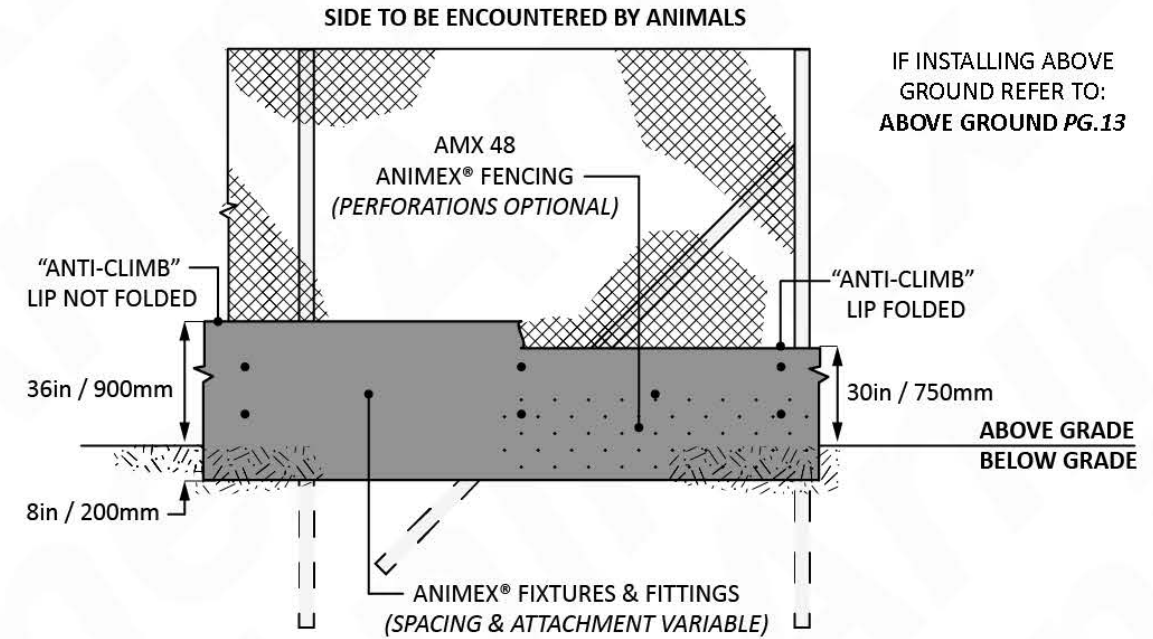
# AMX 48 Attached Chain-link



**SECTION VIEW**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

**AMX 48**  
Attached Chain-link



**ELEVATION VIEW**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

**AMX 48**  
Attached Chain-link

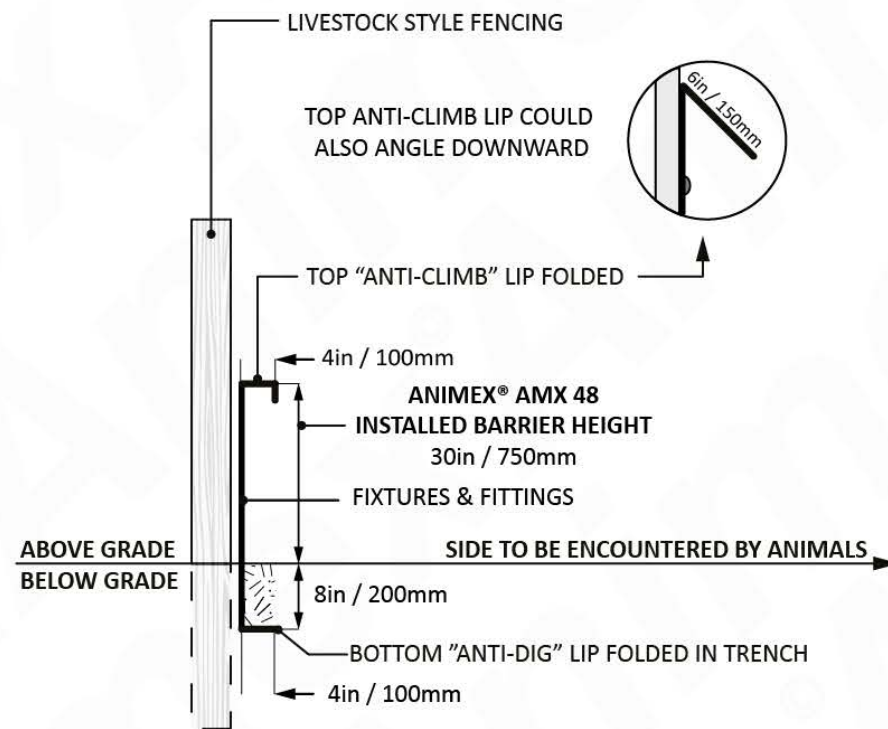


# ● AMX 48 Attached Live Stock

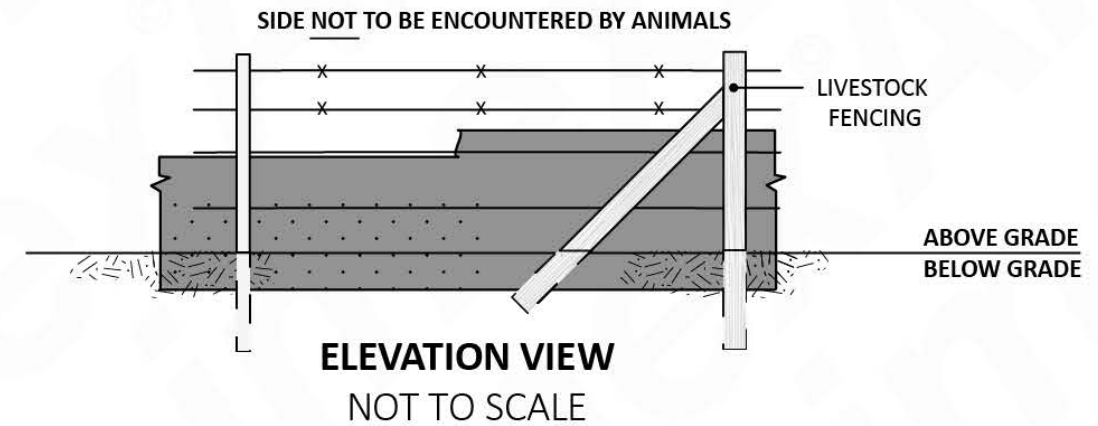
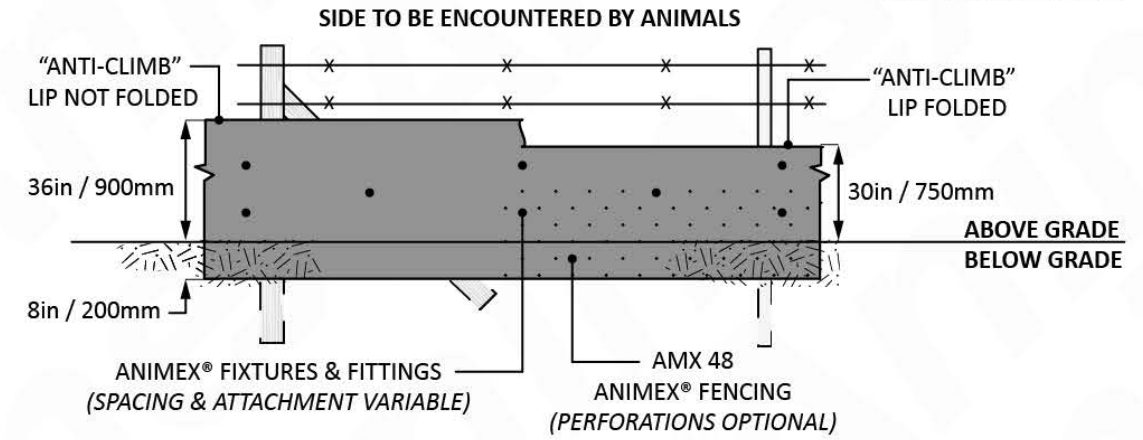
AMX 48  
Attached Livestock

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

IF INSTALLING ABOVE GROUND REFER TO:  
ABOVE GROUND PG.13



**SECTION VIEW**  
NOT TO SCALE



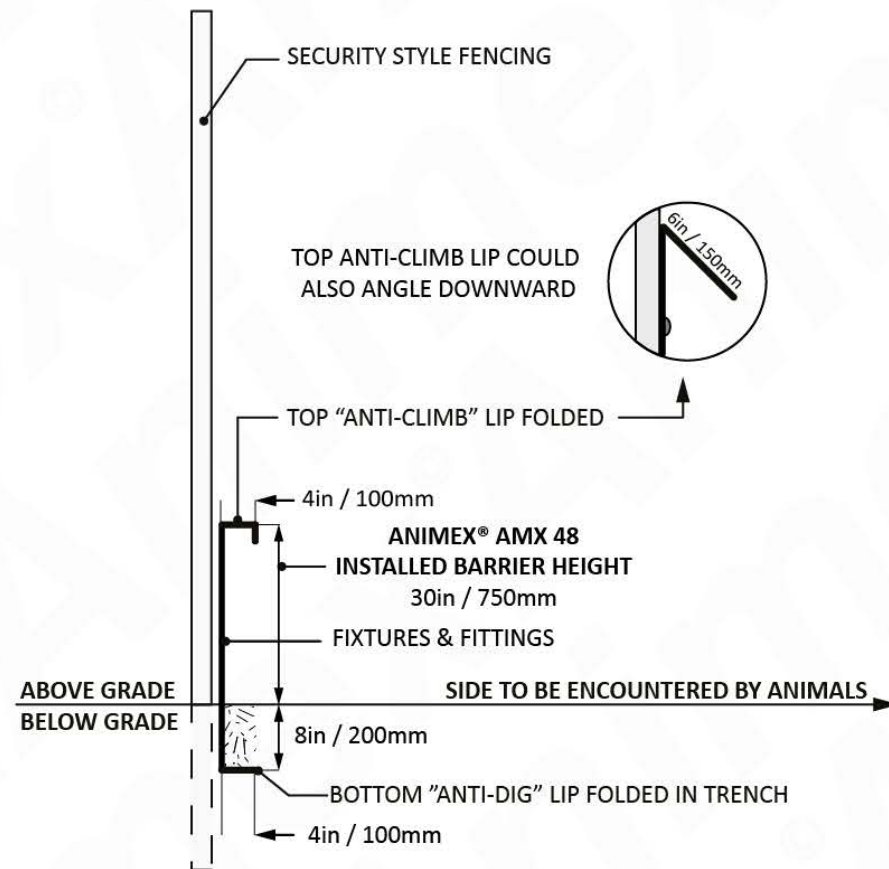
**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

AMX 48  
Attached Livestock

# ● AMX 48 Attached Security

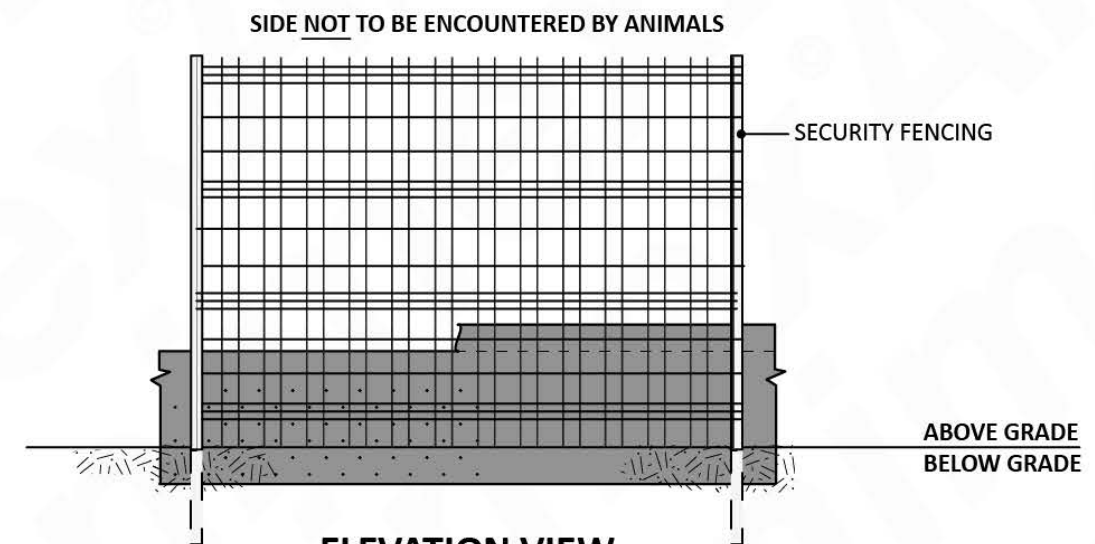
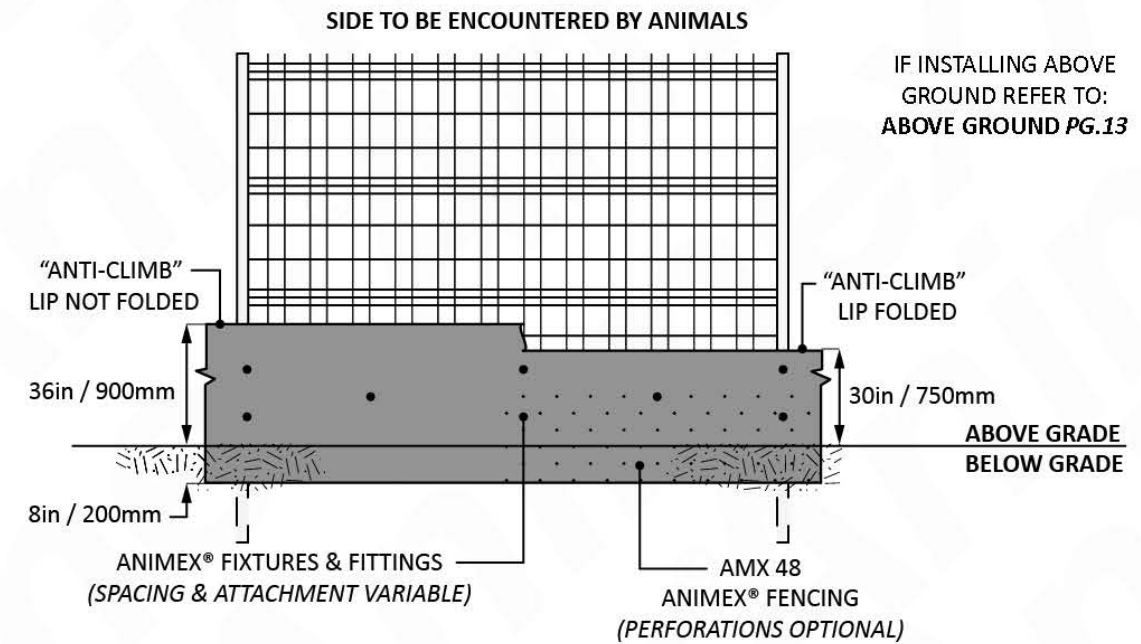
**AMX 48**  
Attached Security

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**SECTION VIEW**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**ELEVATION VIEW**  
NOT TO SCALE

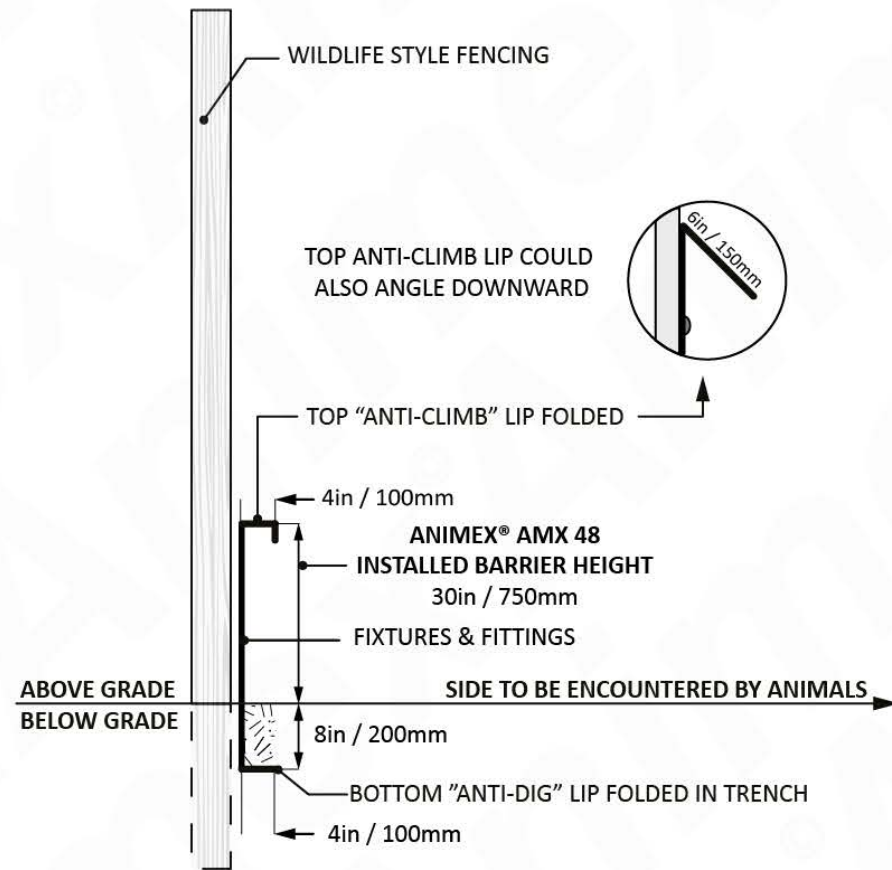
**AMX 48**  
Attached Security



# AMX 48 Attached Large Wildlife

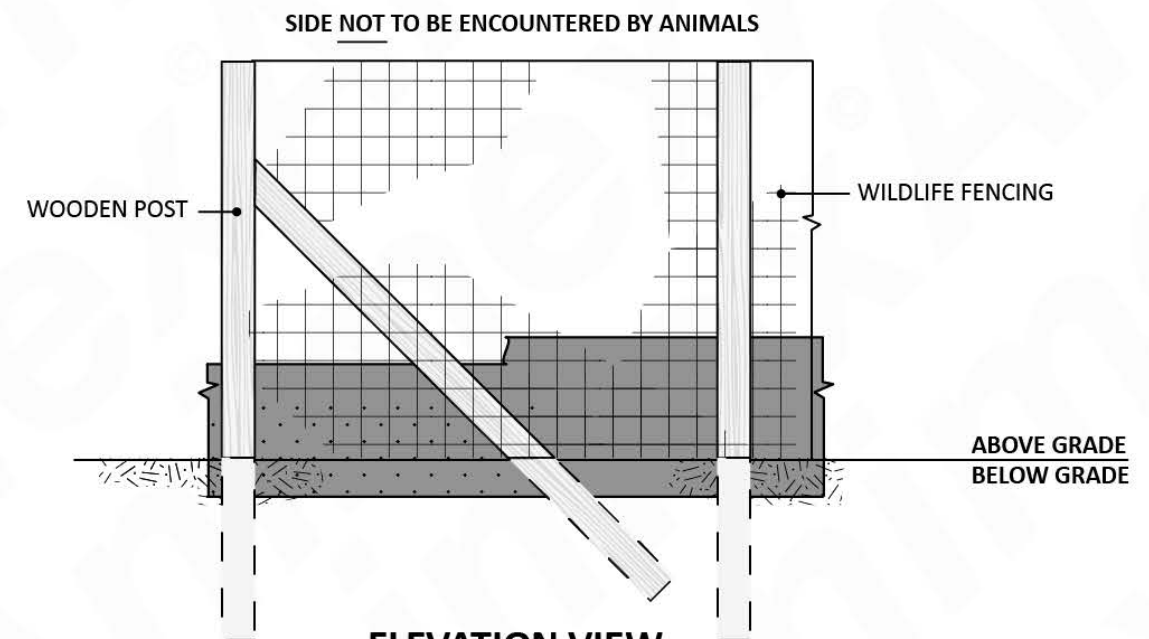
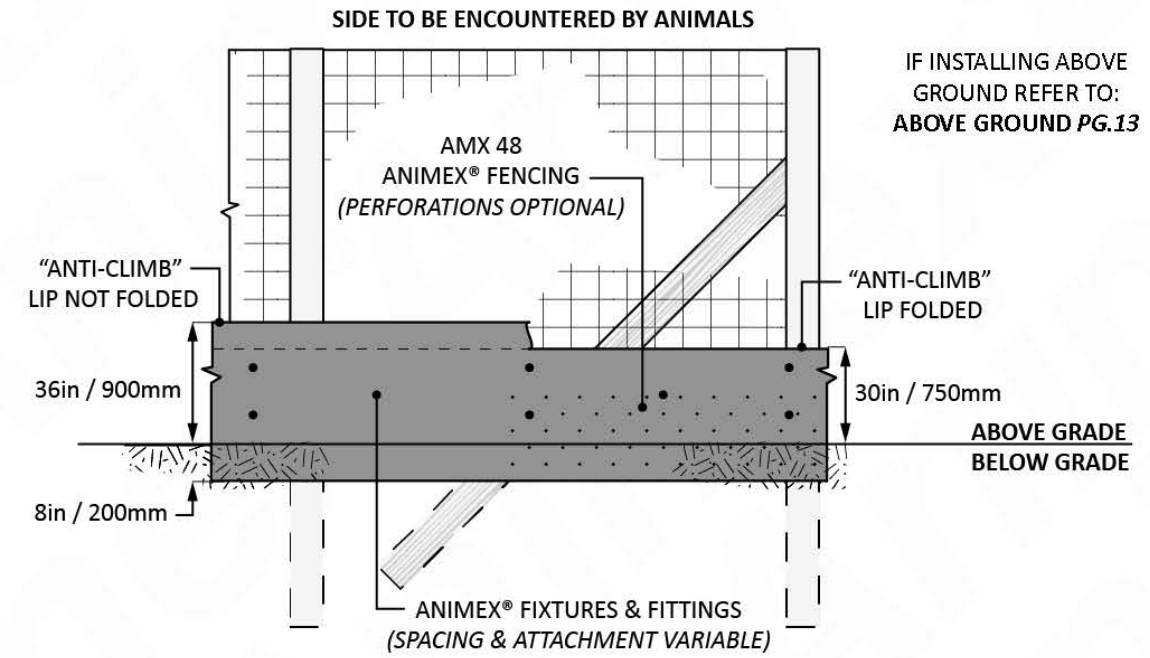
AMX 48  
Attached Wildlife

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



**SECTION VIEW**  
NOT TO SCALE

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.




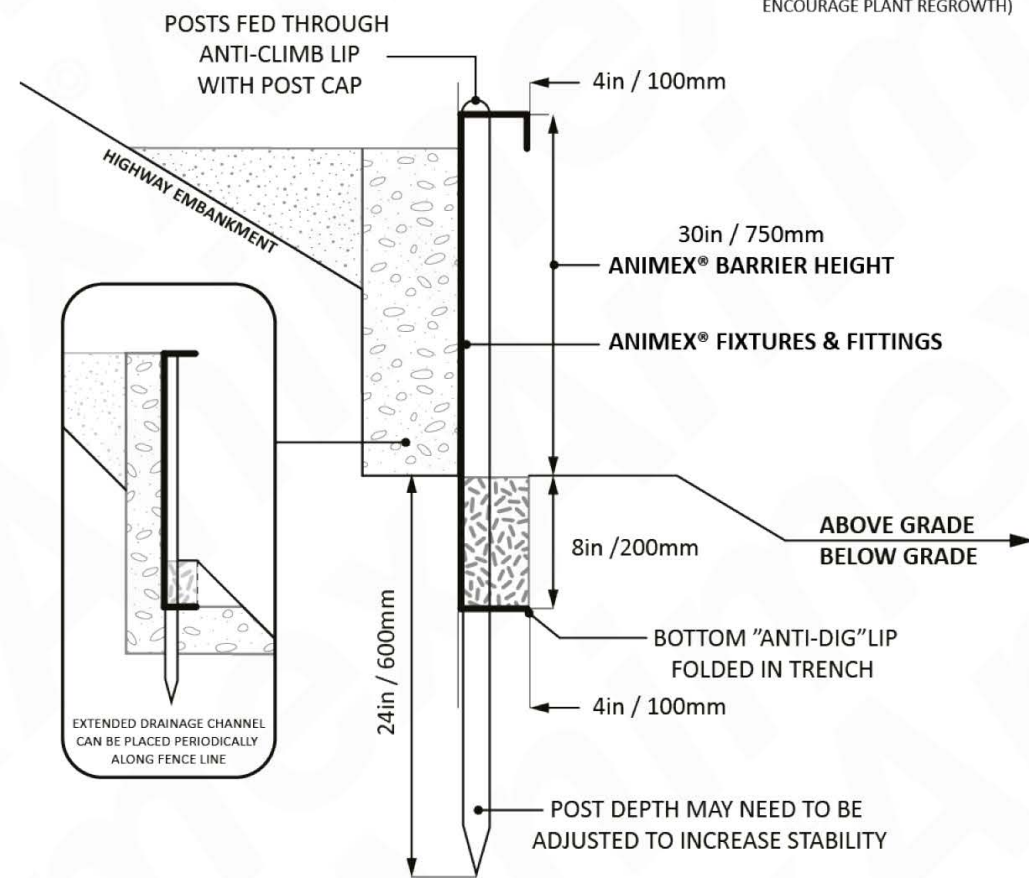
**ELEVATION VIEW**  
NOT TO SCALE

AMX 48  
Attached Wildlife

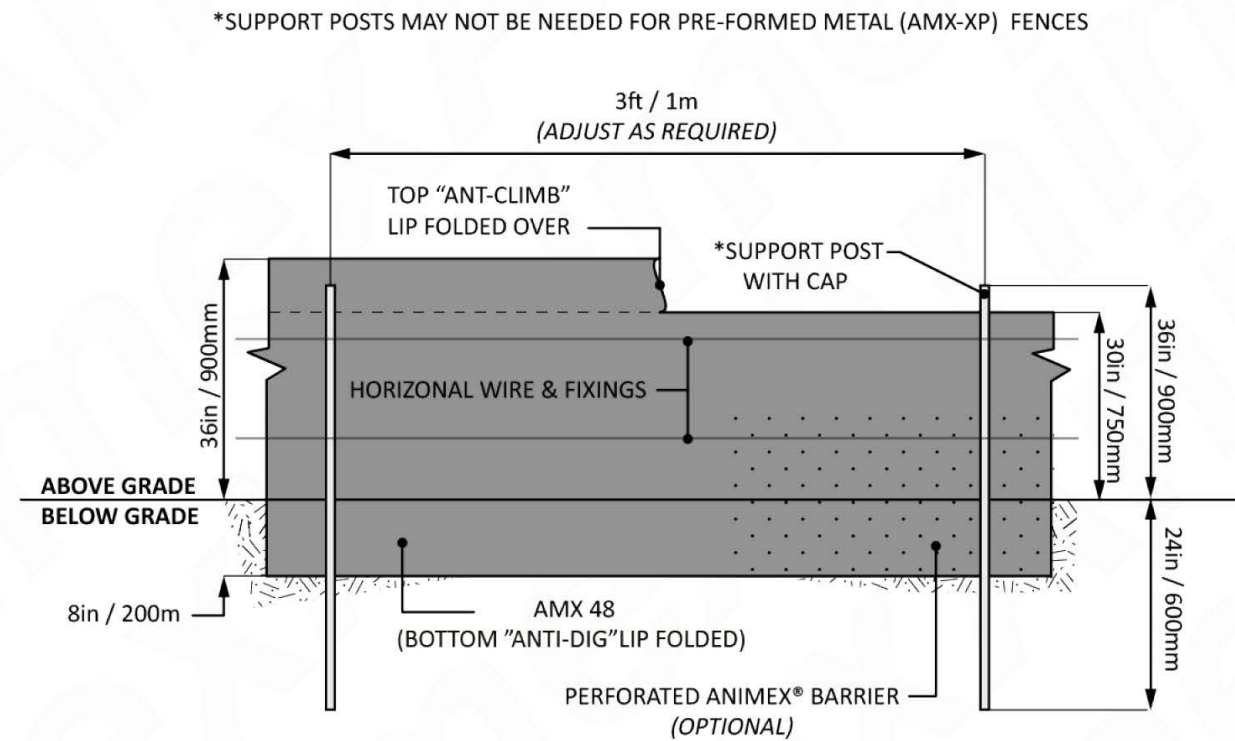
# Specialized Fencing Specifications Roadside Embankment

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

-  EMBANKMENT SOIL USED TO BACK FILL SHALLOW TRENCH
-  CLEAR STONE BEHIND FENCE TO PROVIDE DRAINAGE
-  TOP SOIL TO LEVEL EMBANKMENT (EMBED LOCAL SEED MIX TO ENCOURAGE PLANT REGROWTH)

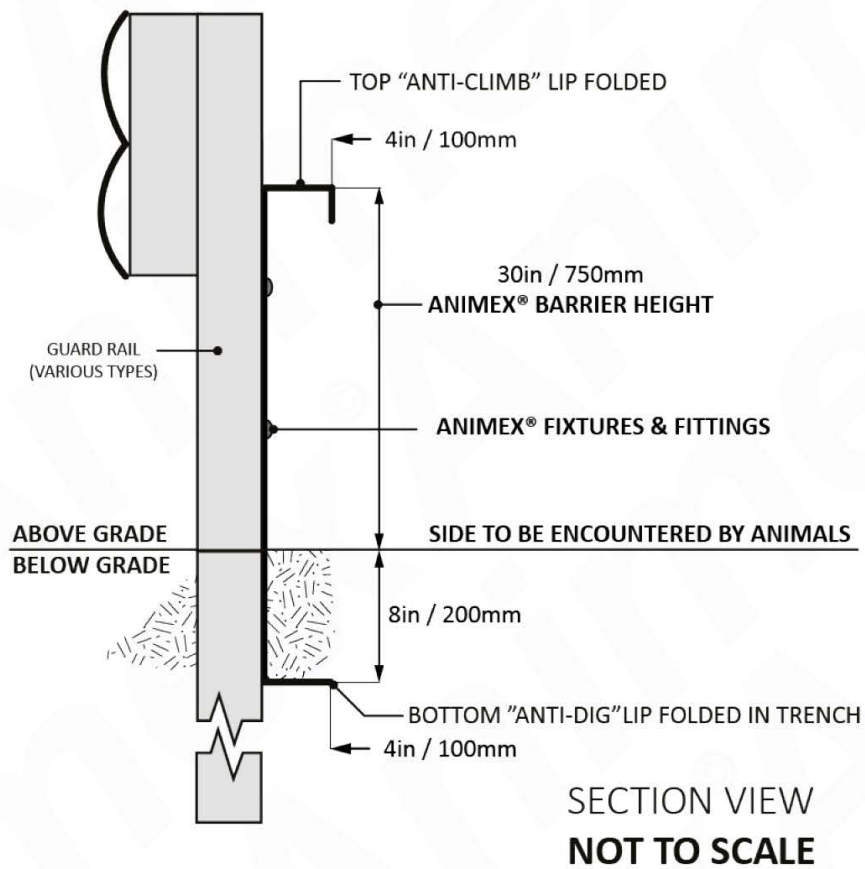


SECTION VIEW  
NOT TO SCALE



ELEVATION VIEW  
NOT TO SCALE

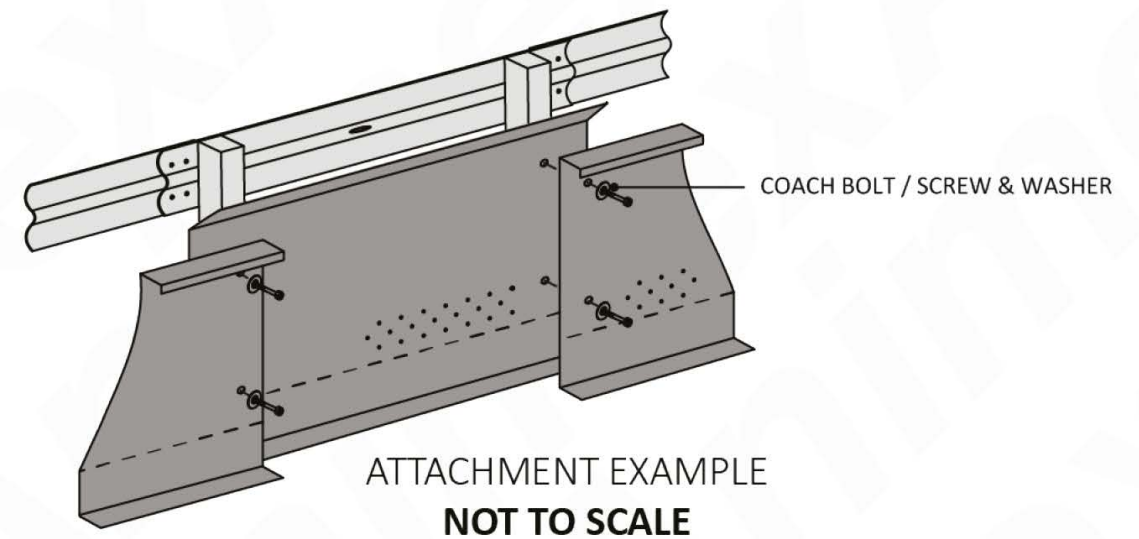
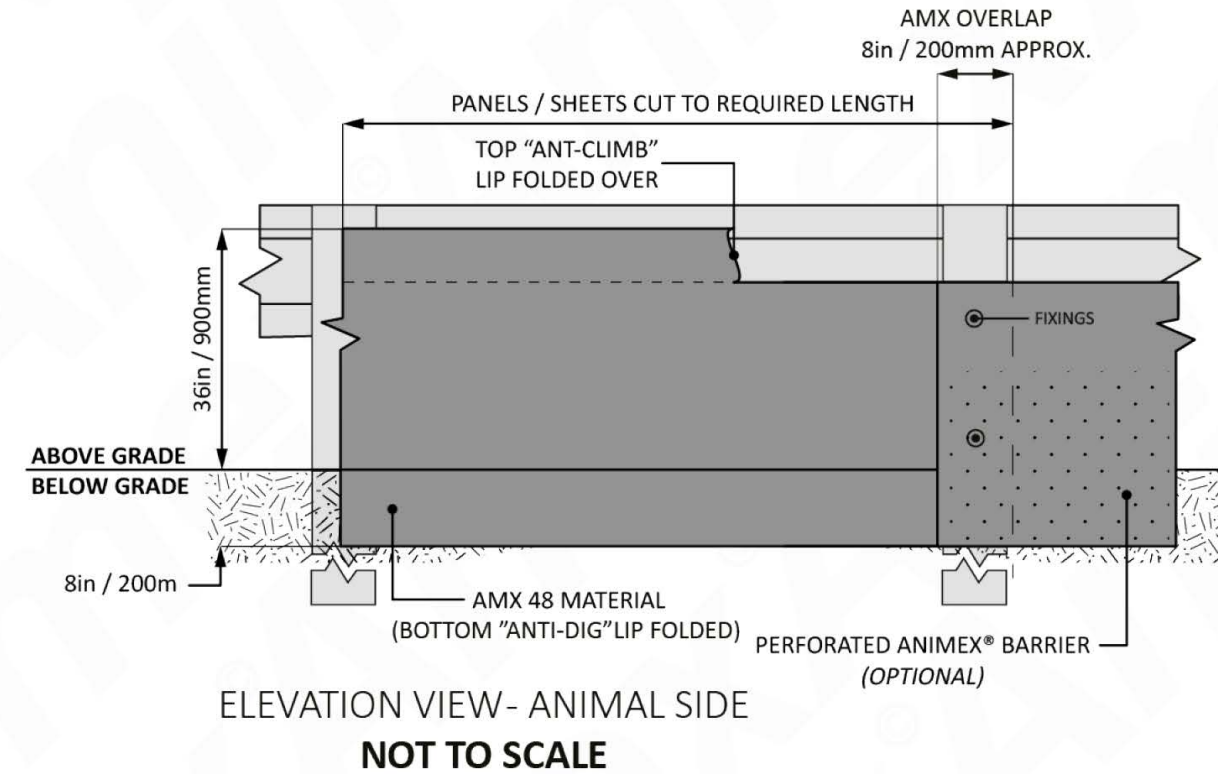
# Specialized Fencing Specifications Roadside Guardrail



**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.

# Specialized Fencing Specifications Roadside Guardrail

ADJUSTMENTS CAN BE MADE TO FIT ALL ROADSIDE GUARD RAILS VARIATIONS

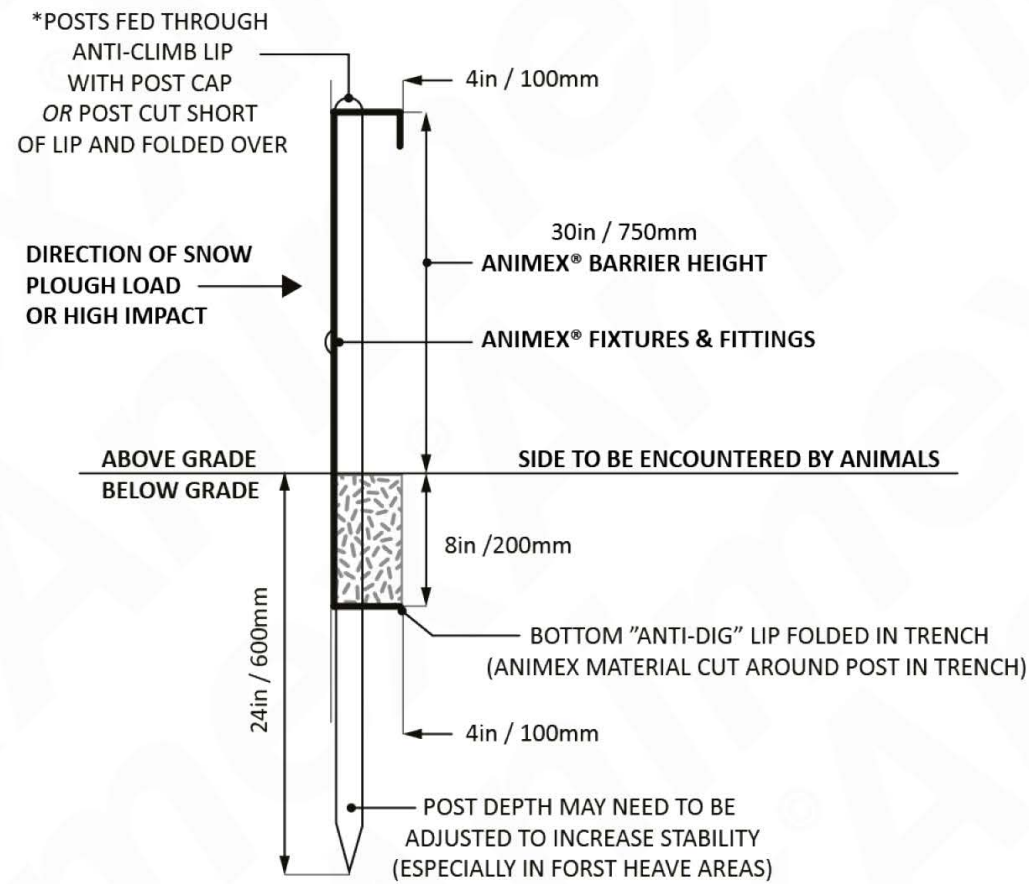




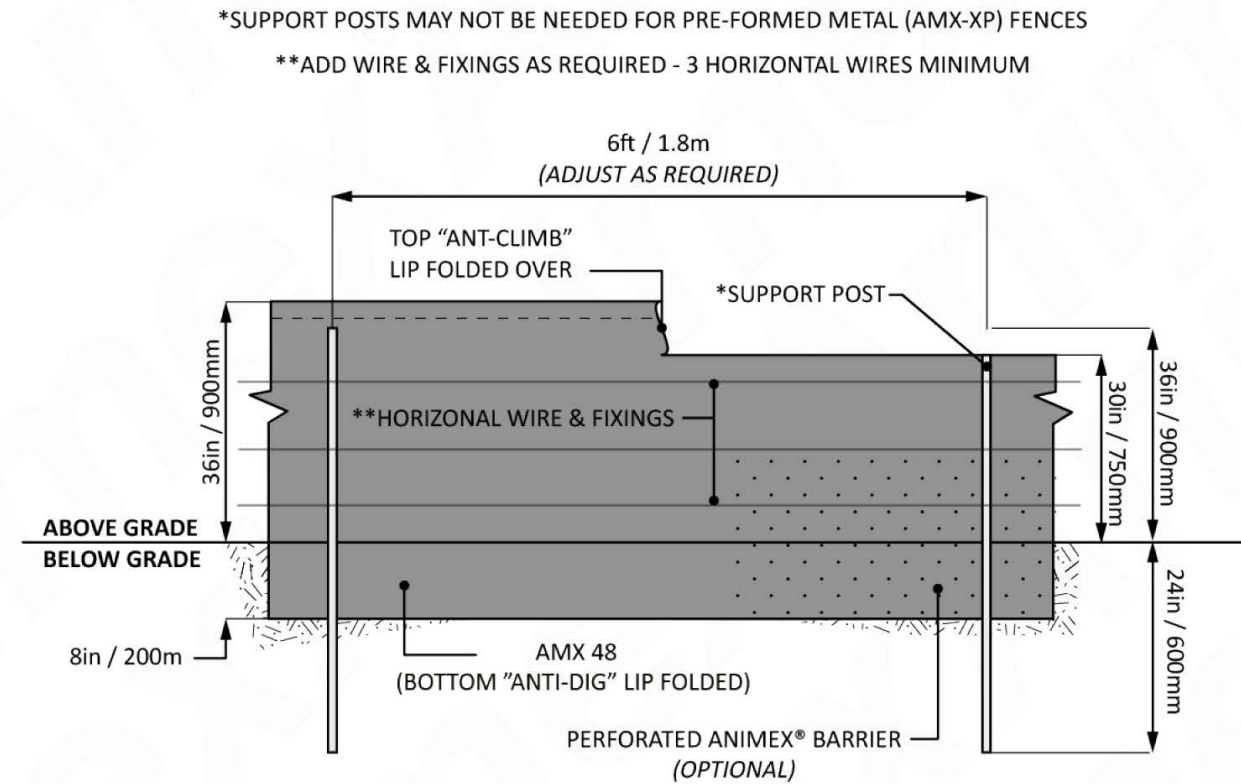
# Specialized Fencing Specifications Snow Load / High Impact

Specialized Fencing Specifications  
Snow Load / High Impact

**NOTES:**  
This specification should be used to aid installation. Measurements are accurate but may need to be adjusted dependent on location, conditions and local authority recommendations.



SECTION VIEW  
NOT TO SCALE



ELEVATION VIEW  
NOT TO SCALE

Specialized Fencing Specifications  
Snow Load / High Impact





## ● Tender Document Descriptions

### AMX-T / AMX-SP

**General Description:**

Specifically designed solid Animex wildlife fencing barrier to protect, exclude or guide wildlife.

**Common Applications:**

Roads  
Construction sites  
Scientific research  
Conservation zones  
Species re-introduction

**Material Height:**

1015mm (40in)  
1070mm (42in)  
1220mm (48in)  
1550mm (60in)  
Custom options available

**Material Thickness:**

AMX-T (Temporary): 1mm  
AMX-SP (Semi-Permanent): 2mm

**Material Properties:**

Solid barrier - no mesh, matrix or geo-textile material  
Made from High Density Polyethylene (HDPE) in North America  
Grooves or scoreline 100mm (4in) from the top and bottom edge to create fold-able lips  
Glossy surface on one side  
Perforations to allow water flow (if required)  
Supplied in sheets or rolls  
Maximum weight per item 25kg (55lbs)

**Installation:**

See relevant drawings and guides displayed in this document between pages 6 and 29

### AMX-XP

**General Description:**

Specifically designed solid Animex wildlife fencing barrier to protect, exclude or guide wildlife.

**Common Applications:**

Roads  
Construction sites  
Scientific research  
Conservation zones  
Species re-introduction

**Material Height:**

1015mm (40in)  
1070mm (42in)  
1220mm (48in)  
1550mm (60in)  
Custom options available

**Material Thickness:**

AMX-XP - (Permanent): 2mm

**Material Properties:**

Solid metal barrier - no mesh, matrix or geo-textile material  
Made from weather resistant metals  
Pre-formed with top and bottom lips (as detailed in drawing pg9)  
Perforations to allow water flow (if required)  
Supplied in sheets  
Maximum weight per item 40kg (88lbs)

**Installation:**

See relevant drawings and guides displayed in this document on pages 8 and 9

This document is continually updated based on new research and information.

To ensure you are referencing the most recent version please contact:

**[info@animexfencing.com](mailto:info@animexfencing.com)**

**FOR MORE INFORMATION OF WILDLIFE FENCING PLEASE VISIT:**

**[WWW.WILDLIFEFENCING.COM](http://WWW.WILDLIFEFENCING.COM)**

***Animex***<sup>®</sup>  
*[www.animexfencing.com](http://www.animexfencing.com)*



## **C2 California Natural Diversity Database Results**







# Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (San Bernardino North (3411723) OR Harrison Mtn. (3411722) OR Keller Peak (3411721) OR Yucaipa (3411711) OR El Casco (3311781) OR Sunnymead (3311782) OR Riverside East (3311783) OR San Bernardino South (3411713) OR Redlands (3411712))

Inland Feeder - Foothill Pump Station Intertie Project (March 2024)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Alvin Meadow bedstraw</b> <i>Galium californicum ssp. primum</i>	PDRUB0N0E6	None	None	G5T2	S2	1B.2
<b>American badger</b> <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
<b>American bumble bee</b> <i>Bombus pensylvanicus</i>	IIHYM24260	None	None	G3G4	S2	
<b>Andrew's marble butterfly</b> <i>Euchloe hyantis andrewsi</i>	IILEPA5032	None	None	G3G4T2	S2	
<b>arroyo chub</b> <i>Gila orcuttii</i>	AFCJB13120	None	None	G2	S2	SSC
<b>ash-gray paintbrush</b> <i>Castilleja cinerea</i>	PDSCR0D0H0	Threatened	None	G1G2	S1S2	1B.2
<b>bald eagle</b> <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S3	FP
<b>Bear Valley checkerbloom</b> <i>Sidalcea malviflora ssp. dolosa</i>	PDMAL110FH	None	None	G5T2	S2	1B.2
<b>Bell's sparrow</b> <i>Artemisospiza belli belli</i>	ABPBX97021	None	None	G5T2T3	S3	WL
<b>bird-foot checkerbloom</b> <i>Sidalcea pedata</i>	PDMAL110L0	Endangered	Endangered	G1	S1	1B.1
<b>black bog-rush</b> <i>Schoenus nigricans</i>	PMCYP0P010	None	None	G4	S2	2B.2
<b>bristly sedge</b> <i>Carex comosa</i>	PMCYP032Y0	None	None	G5	S2	2B.1
<b>burrowing owl</b> <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S2	SSC
<b>Busck's gallmoth</b> <i>Eugnosta busckana</i>	IILEM2X090	None	None	G1G3	S2S3	
<b>California black rail</b> <i>Laterallus jamaicensis coturniculus</i>	ABNME03041	None	Threatened	G3T1	S2	FP
<b>California diplectronan caddisfly</b> <i>Diplectrona californica</i>	IITRI23010	None	None	G1G2	S1	
<b>California glossy snake</b> <i>Arizona elegans occidentalis</i>	ARADB01017	None	None	G5T2	S2	SSC
<b>California horned lark</b> <i>Eremophila alpestris actia</i>	ABPAT02011	None	None	G5T4Q	S4	WL



## Selected Elements by Common 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>California red-legged frog</b> <i>Rana draytonii</i>	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b>California satintail</b> <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G3	S3	2B.1
<b>Canyon Live Oak Ravine Forest</b> <i>Canyon Live Oak Ravine Forest</i>	CTT61350CA	None	None	G3	S3.3	
<b>chaparral ragwort</b> <i>Senecio aphanactis</i>	PDAST8H060	None	None	G3	S2	2B.2
<b>coast horned lizard</b> <i>Phrynosoma blainvillii</i>	ARACF12100	None	None	G4	S4	SSC
<b>coast patch-nosed snake</b> <i>Salvadora hexalepis virgultea</i>	ARADB30033	None	None	G5T4	S3	SSC
<b>coastal California gnatcatcher</b> <i>Polioptila californica californica</i>	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
<b>coastal whiptail</b> <i>Aspidoscelis tigris stejnegeri</i>	ARACJ02143	None	None	G5T5	S3	SSC
<b>Cooper's hawk</b> <i>Accipiter cooperii</i>	ABNKC12040	None	None	G5	S4	WL
<b>Coulter's goldfields</b> <i>Lasthenia glabrata ssp. coulteri</i>	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b>Crotch's bumble bee</b> <i>Bombus crotchii</i>	IIHYM24480	None	Candidate Endangered	G2	S2	
<b>Davidson's saltscale</b> <i>Atriplex serenana var. davidsonii</i>	PDCHE041T1	None	None	G5T1	S1	1B.2
<b>Delhi Sands flower-loving fly</b> <i>Rhaphiomidas terminatus abdominalis</i>	IIDIP05021	Endangered	None	G1T1	S1	
<b>Desert cuckoo wasp</b> <i>Ceratochrysis longimala</i>	IIHYM71040	None	None	G1	S1	
<b>ferruginous hawk</b> <i>Buteo regalis</i>	ABNKC19120	None	None	G4	S3S4	WL
<b>Gambel's water cress</b> <i>Nasturtium gambelii</i>	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
<b>golden eagle</b> <i>Aquila chrysaetos</i>	ABNKC22010	None	None	G5	S3	FP
<b>Hall's monardella</b> <i>Monardella macrantha ssp. hallii</i>	PDLAM180E1	None	None	G5T3	S3	1B.3
<b>Horn's milk-vetch</b> <i>Astragalus hornii var. hornii</i>	PDFAB0F421	None	None	GUT1	S1	1B.1
<b>hot springs fimbriatylis</b> <i>Fimbristylis thermalis</i>	PMCYP0B0N0	None	None	G4	S1S2	2B.2
<b>Laguna Mountains jewelflower</b> <i>Streptanthus bernardinus</i>	PDBRA2G060	None	None	G3G4	S3S4	4.3



# Selected Elements by Common 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>Lawrence's goldfinch</b> <i>Spinus lawrencei</i>	ABPBY06100	None	None	G3G4	S4	
<b>least Bell's vireo</b> <i>Vireo bellii pusillus</i>	ABPBW01114	Endangered	Endangered	G5T2	S3	
<b>lemon lily</b> <i>Lilium parryi</i>	PMLIL1A0J0	None	None	G3	S3	1B.2
<b>lesser long-nosed bat</b> <i>Leptonycteris yerbabuenae</i>	AMACB03030	Delisted	None	G3	S1	SSC
<b>lodgpole chipmunk</b> <i>Neotamias speciosus speciosus</i>	AMAFB02172	None	None	G4T3T4	S2	
<b>loggerhead shrike</b> <i>Lanius ludovicianus</i>	ABPBR01030	None	None	G4	S4	SSC
<b>Los Angeles pocket mouse</b> <i>Perognathus longimembris brevinasus</i>	AMAFD01041	None	None	G5T2	S1S2	SSC
<b>Los Angeles sunflower</b> <i>Helianthus nuttallii ssp. parishii</i>	PDAST4N102	None	None	G5TX	SX	1A
<b>marsh sandwort</b> <i>Arenaria paludicola</i>	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
<b>merlin</b> <i>Falco columbarius</i>	ABNKD06030	None	None	G5	S3S4	WL
<b>mesa horkelia</b> <i>Horkelia cuneata var. puberula</i>	PDROS0W045	None	None	G4T1	S1	1B.1
<b>Morrison bumble bee</b> <i>Bombus morrisoni</i>	IIHYM24460	None	None	G3	S1S2	
<b>Mt. Pinos onion</b> <i>Allium howellii var. clokeyi</i>	PMLIL02161	None	None	G4T2	S2	1B.3
<b>mud nama</b> <i>Nama stenocarpa</i>	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<b>Nevin's barberry</b> <i>Berberis nevinii</i>	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
<b>northwestern San Diego pocket mouse</b> <i>Chaetodipus fallax fallax</i>	AMAFD05031	None	None	G5T3T4	S3S4	
<b>orange-throated whiptail</b> <i>Aspidoscelis hyperythra</i>	ARACJ02060	None	None	G5	S2S3	WL
<b>pallid bat</b> <i>Antrozous pallidus</i>	AMACC10010	None	None	G4	S3	SSC
<b>Palmer's mariposa-lily</b> <i>Calochortus palmeri var. palmeri</i>	PMLIL0D122	None	None	G3T2	S2	1B.2
<b>Parish's alumroot</b> <i>Heuchera parishii</i>	PDSAX0E1F0	None	None	G3	S3	1B.3
<b>Parish's bush-mallow</b> <i>Malacothamnus parishii</i>	PDMAL0Q0C0	None	None	GXQ	SX	1A





**Selected Elements by Common 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>Parish's checkerbloom</b> <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	PDMAL110A3	None	Rare	G3T1	S1	1B.2
<b>Parish's desert-thorn</b> <i>Lycium parishii</i>	PDSOL0G0D0	None	None	G4	S1	2B.3
<b>Parish's gooseberry</b> <i>Ribes divaricatum</i> var. <i>parishii</i>	PDGRO020F3	None	None	G5TX	SX	1A
<b>Parish's yampah</b> <i>Perideridia parishii</i> ssp. <i>parishii</i>	PDAPI1N0C2	None	None	G4T3T4	S2	2B.2
<b>Parry's spineflower</b> <i>Chorizanthe parryi</i> var. <i>parryi</i>	PDPGN040J2	None	None	G3T2	S2	1B.1
<b>Peruvian dodder</b> <i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	PDCUS01111	None	None	G5T4?	SH	2B.2
<b>Plummer's mariposa-lily</b> <i>Calochortus plummerae</i>	PMLIL0D150	None	None	G4	S4	4.2
<b>pocketed free-tailed bat</b> <i>Nyctinomops femorosaccus</i>	AMACD04010	None	None	G5	S3	SSC
<b>prairie wedge grass</b> <i>Sphenopholis obtusata</i>	PMPOA5T030	None	None	G5	S2	2B.2
<b>Pringle's monardella</b> <i>Monardella pringlei</i>	PDLAM180J0	None	None	GX	SX	1A
<b>quino checkerspot butterfly</b> <i>Euphydryas editha quino</i>	IILEPK405L	Endangered	None	G4G5T1T2	S1S2	
<b>red-diamond rattlesnake</b> <i>Crotalus ruber</i>	ARADE02090	None	None	G4	S3	SSC
<b>Riverside fairy shrimp</b> <i>Streptocephalus woottoni</i>	ICBRA07010	Endangered	None	G1G2	S2	
<b>Riversidian Alluvial Fan Sage Scrub</b> <i>Riversidian Alluvial Fan Sage Scrub</i>	CTT32720CA	None	None	G1	S1.1	
<b>Robinson's pepper-grass</b> <i>Lepidium virginicum</i> var. <i>robinsonii</i>	PDBRA1M114	None	None	G5T3	S3	4.3
<b>salt marsh bird's-beak</b> <i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
<b>salt spring checkerbloom</b> <i>Sidalcea neomexicana</i>	PDMAL110J0	None	None	G4	S2	2B.2
<b>San Bernardino aster</b> <i>Symphotrichum defoliatum</i>	PDASTE80C0	None	None	G2	S2	1B.2
<b>San Bernardino flying squirrel</b> <i>Glaucomys oregonensis californicus</i>	AMAFB09021	None	None	G5T1T2	S1S2	SSC
<b>San Bernardino kangaroo rat</b> <i>Dipodomys merriami parvus</i>	AMAFD03143	Endangered	Endangered	G5T1	S1	SSC
<b>San Bernardino Mountains owl's-clover</b> <i>Castilleja lasiorhyncha</i>	PDSCR0D410	None	None	G2?	S2?	1B.2



# Selected Elements by Common 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>San Bernardino ragwort</b> <i>Packera bernardina</i>	PDAST8H0E0	None	None	G2	S2	1B.2
<b>San Bernardino ringneck snake</b> <i>Diadophis punctatus modestus</i>	ARADB10015	None	None	G5T2T3	S2?	
<b>San Diego banded gecko</b> <i>Coleonyx variegatus abbotti</i>	ARACD01031	None	None	G5T5	S1S2	SSC
<b>San Diego black-tailed jackrabbit</b> <i>Lepus californicus bennettii</i>	AMAEB03051	None	None	G5T3T4	S3S4	
<b>San Diego desert woodrat</b> <i>Neotoma lepida intermedia</i>	AMAFF08041	None	None	G5T3T4	S3S4	SSC
<b>San Gabriel slender salamander</b> <i>Batrachoseps gabrieli</i>	AAAAD02110	None	None	G2G3	S2S3	
<b>San Jacinto Valley crownscale</b> <i>Atriplex coronata var. notatior</i>	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
<b>Santa Ana River woollystar</b> <i>Eriastrum densifolium ssp. sanctorum</i>	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
<b>Santa Ana speckled dace</b> <i>Rhinichthys osculus ssp. 8</i>	AFCJB3705K	None	None	G5T1	S1	SSC
<b>Santa Ana sucker</b> <i>Catostomus santaanae</i>	AFCJC02190	Threatened	None	G1	S1	
<b>silver-haired ivesia</b> <i>Ivesia argyrocoma var. argyrocoma</i>	PDROS0X021	None	None	G2T2	S2	1B.2
<b>slender-horned spineflower</b> <i>Dodecahema leptoceras</i>	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<b>smooth tarplant</b> <i>Centromadia pungens ssp. laevis</i>	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
<b>Sonoran maiden fern</b> <i>Pelazoneuron puberulum var. sonorensense</i>	PPTHE05192	None	None	G5T3	S2	2B.2
<b>Southern California legless lizard</b> <i>Anniella stebbinsi</i>	ARACC01060	None	None	G3	S3	SSC
<b>southern California rufous-crowned sparrow</b> <i>Aimophila ruficeps canescens</i>	ABPBX91091	None	None	G5T3	S4	WL
<b>Southern Coast Live Oak Riparian Forest</b> <i>Southern Coast Live Oak Riparian Forest</i>	CTT61310CA	None	None	G4	S4	
<b>Southern Cottonwood Willow Riparian Forest</b> <i>Southern Cottonwood Willow Riparian Forest</i>	CTT61330CA	None	None	G3	S3.2	
<b>southern grasshopper mouse</b> <i>Onychomys torridus ramona</i>	AMAFF06022	None	None	G5T3	S3	SSC
<b>southern jewelflower</b> <i>Streptanthus campestris</i>	PDBRA2G0B0	None	None	G3	S3	1B.3
<b>Southern Mixed Riparian Forest</b> <i>Southern Mixed Riparian Forest</i>	CTT61340CA	None	None	G2	S2.1	



**Selected Elements by Common 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>southern mountain yellow-legged frog</b> <i>Rana muscosa</i>	AAABH01330	Endangered	Endangered	G1	S2	WL
<b>Southern Riparian Forest</b> <i>Southern Riparian Forest</i>	CTT61300CA	None	None	G4	S4	
<b>Southern Riparian Scrub</b> <i>Southern Riparian Scrub</i>	CTT63300CA	None	None	G3	S3.2	
<b>southern rubber boa</b> <i>Charina umbratica</i>	ARADA01011	None	Threatened	G2G3	S2	
<b>Southern Sycamore Alder Riparian Woodland</b> <i>Southern Sycamore Alder Riparian Woodland</i>	CTT62400CA	None	None	G4	S4	
<b>Southern Willow Scrub</b> <i>Southern Willow Scrub</i>	CTT63320CA	None	None	G3	S2.1	
<b>southwestern willow flycatcher</b> <i>Empidonax traillii eximius</i>	ABPAE33043	Endangered	Endangered	G5T2	S3	
<b>steelhead - southern California DPS</b> <i>Oncorhynchus mykiss irideus pop. 10</i>	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
<b>Stephens' kangaroo rat</b> <i>Dipodomys stephensi</i>	AMAFD03100	Threatened	Threatened	G2	S3	
<b>Swainson's hawk</b> <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S4	
<b>thread-leaved brodiaea</b> <i>Brodiaea filifolia</i>	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
<b>tricolored blackbird</b> <i>Agelaius tricolor</i>	ABPBXB0020	None	Threatened	G1G2	S2	SSC
<b>two-striped gartersnake</b> <i>Thamnophis hammondi</i>	ARADB36160	None	None	G4	S3S4	SSC
<b>western mastiff bat</b> <i>Eumops perotis californicus</i>	AMACD02011	None	None	G4G5T4	S3S4	SSC
<b>western pond turtle</b> <i>Emys marmorata</i>	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
<b>western spadefoot</b> <i>Spea hammondi</i>	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
<b>western yellow bat</b> <i>Lasiurus xanthinus</i>	AMACC05070	None	None	G4G5	S3	SSC
<b>western yellow-billed cuckoo</b> <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b>white cuckoo bee</b> <i>Neolarra alba</i>	IIHYM81010	None	None	GH	SH	
<b>white-bracted spineflower</b> <i>Chorizanthe xanti var. leucotheca</i>	PDPGN040Z1	None	None	G4T3	S3	1B.2
<b>white-eared pocket mouse</b> <i>Perognathus alticola alticola</i>	AMAFD01081	None	None	G2TH	SH	SSC



**Selected Elements by Common 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>white-faced ibis</b> <i>Plegadis chihi</i>	ABNGE02020	None	None	G5	S3S4	WL
<b>white-tailed kite</b> <i>Elanus leucurus</i>	ABNKC06010	None	None	G5	S3S4	FP
<b>Wright's trichocoronis</b> <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	PDAST9F031	None	None	G4T3	S1	2B.1
<b>yellow warbler</b> <i>Setophaga petechia</i>	ABPBX03010	None	None	G5	S3	SSC
<b>yellow-breasted chat</b> <i>Icteria virens</i>	ABPBX24010	None	None	G5	S4	SSC
<b>Yucaipa onion</b> <i>Allium marvinii</i>	PMLIL02330	None	None	G1	S1	1B.2

**Record Count: 129**





## **C3 CNPS Rare Plant Inventory**






[CNPS Rare Plant Inventory](#)





Search Results



88 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3411712:3411723:3411722:3411721:3411711:3311781:3311782:3311783:3411713]






▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	PLANT RANK	CA RARE	CA ENDEMIC	DATE ADDED	PHOTO
<a href="#"><i>Abronia villosa</i></a> <a href="#"><i>var. aurita</i></a>	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar- Sep	None	None	G5T2?	S2	1B.1			2001- 01-01	 © 2011 Aaron E. Sims
<a href="#"><i>Acanthoscyphus parishii</i></a> <a href="#"><i>var. parishii</i></a>	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	None	None	G4? T3T4	S3S4	4.2	Yes		2007- 04-05	 © 2014 Keir Morse
<a href="#"><i>Allium howellii</i></a> <a href="#"><i>var. clokeyi</i></a>	Mt. Pinos onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4T2	S2	1B.3	Yes		1974- 01-01	 © 2016 Keir Morse
<a href="#"><i>Allium marvinii</i></a>	Yucaipa onion	Alliaceae	perennial bulbiferous herb	Apr-May	None	None	G1	S1	1B.2	Yes		2001- 01-01	 © 2013 Keir Morse
<a href="#"><i>Androsace elongata</i></a> ssp. <a href="#"><i>acuta</i></a>	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2			1994- 01-01	 © 2008 Aaron Schusteff
<a href="#"><i>Arenaria paludicola</i></a>	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1			1984- 01-01	No Photo Available
<a href="#"><i>Artemisia palmeri</i></a>	San Diego sagewort	Asteraceae	perennial deciduous shrub	(Feb)May- Sep	None	None	G3?	S3?	4.2			1974- 01-01	No Photo Available
<a href="#"><i>Asplenium vespertinum</i></a>	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2			1974- 01-01	No Photo Available



<u><i>Astragalus hornii</i></u> <u>var. <i>hornii</i></u>	Horn's milk-vetch	Fabaceae	annual herb	May-Oct	None	None	GUT1	S1	1B.1		2006-12-01	No Photo Available
<u><i>Astragalus pachypus</i></u> var. <u><i>jaegeri</i></u>	Jaeger's milk-vetch	Fabaceae	perennial shrub	Dec-Jun	None	None	G4T1	S1	1B.1	Yes	1994-01-01	No Photo Available
<u><i>Atriplex coronata</i></u> var. <u><i>notatior</i></u>	San Jacinto Valley crownscale	Chenopodiaceae	annual herb	Apr-Aug	FE	None	G4T1	S1	1B.1	Yes	1988-01-01	 © 2008 Larry Sward
<u><i>Atriplex serenana</i></u> var. <u><i> davidsonii</i></u>	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2		1994-01-01	No Photo Available
<u><i>Berberis nevinii</i></u>	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
<u><i>Brodiaea filifolia</i></u>	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	FT	CE	G2	S2	1B.1	Yes	1974-01-01	 © 2016 Keir Morse
<u><i>Calochortus catalinae</i></u>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
<u><i>Calochortus palmeri</i></u> var. <u><i>palmeri</i></u>	Palmer's mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3T2	S2	1B.2	Yes	1994-01-01	No Photo Available
<u><i>Calochortus plummerae</i></u>	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	Yes	1994-01-01	No Photo Available
<u><i>Calochortus simiflans</i></u>	La Panza mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.3	Yes	1980-01-01	 © 2011 Aaron E. Sims
<u><i>Carex comosa</i></u>	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	 Dean Wm. Taylor 1997
<u><i>Castilleja cinerea</i></u>	ash-gray paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun-Aug	FT	None	G1G2	S1S2	1B.2	Yes	1974-01-01	No Photo Available
<u><i>Castilleja lasiorhyncha</i></u>	San Bernardino Mountains owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	May-Aug	None	None	G2?	S2?	1B.2	Yes	1980-01-01	No Photo Available
<u><i>Castilleja montigena</i></u>	Heckard's paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available


<i>Caulanthus silans</i>	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar- May(Jun)	None	None	G4	S4	4.2	Yes	1974- 01-01	No Photo Available
<i>Centro dia pungens ssp. laevis</i>	smooth tarplant	Asteraceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.1	Yes	1994- 01-01	No Photo Available
<i>Chloropyron muiriti m ssp. riti mu</i>	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May- Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974- 01-01	No Photo Available
<i>Chorizanthe leptotheca</i>	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	None	None	G3	S3	4.2		1994- 01-01	No Photo Available
<i>Chorizanthe parryi var. parryi</i>	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G3T2	S2	1B.1	Yes	1994- 01-01	 © 2012 Keir Morse
<i>Chorizanthe xanti var. leucotheca</i>	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	None	None	G4T3	S3	1B.2	Yes	1994- 01-01	No Photo Available
<i>Convolvulus silans</i>	small- flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994- 01-01	No Photo Available
<i>Cuscuta obtusiflora var. glandulosa</i>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	G5T4?	SH	2B.2		2011- 08-24	No Photo Available
<i>Deinandra paniculata</i>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr- Nov	None	None	G4	S4	4.2		2001- 01-01	No Photo Available
<i>Diplacus clevelandii</i>	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	None	None	G4	S4	4.2		1980- 01-01	 © 2020 W. Juergen Schrenk
<i>Dodecahe leptoceras</i>	slender- horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1980- 01-01	No Photo Available
<i>Eriastrum densifolium ssp. sanctorum</i>	Santa Ana River woolystar	Polemoniaceae	perennial herb	Apr-Sep	FE	CE	G4T1	S1	1B.1	Yes	1980- 01-01	No Photo Available
<i>Eriophyllum lanatum var. obovatum</i>	southern Sierra woolly sunflower	Asteraceae	perennial herb	Jun-Jul	None	None	G5T4	S4	4.3	Yes	1974- 01-01	No Photo Available
<i>Erythranthe exigua</i>	San Bernardino Mountains monkeyflower	Phrymaceae	annual herb	May-Jul	None	None	G2	S2	1B.2		1974- 01-01	No Photo Available

<i>Fimbristylis thermalis</i>	hot springs fimbriistylis	Cyperaceae	perennial rhizomatous herb	Jul-Sep	None	None	G4	S1S2	2B.2		1980-01-01	No Photo Available
<i>Frasera neglecta</i>	pine green-gentian	Gentianaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	1980-01-01	No Photo Available
<i>Fritillaria pinetorum</i>	pine fritillary	Liliaceae	perennial bulbiferous herb	May-Jul(Sep)	None	None	G4	S4	4.3	Yes	2001-01-01	 © 2008 Steve Matson
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G5T2	S2	1B.2	Yes	1974-01-01	 © 2013 Keir Morse
<i>Galium johnstonii</i>	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	Yes	1974-01-01	No Photo Available
<i>Heuchera caespitosa</i>	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Heuchera parishii</i>	Parish's alumroot	Saxifragaceae	perennial rhizomatous herb	Jun-Aug	None	None	G3	S3	1B.3	Yes	1974-01-01	 © 2015 Keir Morse
<i>Hordeum intercedens</i>	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	Yes	2001-01-01	 © 2008 Tony Morosco
<i>Hulsea vestita</i> ssp. <i>parryi</i>	Parry's sunflower	Asteraceae	perennial herb	Apr-Aug	None	None	G5T4	S4	4.3	Yes	1994-01-01	 © 2015 Keir Morse

<i>Imperata brevifolia</i>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006- 12-26	 © 2020 Matt C. Berger
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	silver-haired ivesia	Rosaceae	perennial herb	Jun-Aug	None	None	G2T2	S2	1B.2	Yes	1974- 01-01	 © 2015 Keir Morse
<i>Juglans californica</i>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	Yes	1994- 01-01	 © 2020 Zoya Akulova
<i>Juncus duranii</i>	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	None	None	G3	S3	4.3	Yes	1974- 01-01	 © 2017 Keir Morse
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994- 01-01	 © 2013 Keir Morse
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994- 01-01	 © 2015 Keir Morse
<i>Lilium hum boldtii</i> ssp. <i>ocellatum</i>	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar- Jul(Aug)	None	None	G4T4?	S4?	4.2	Yes	1980- 01-01	 © 2008 Thomas Stoughton
<i>Lilium parryi</i>	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	None	None	G3	S3	1B.2		1974- 01-01	 © 2009 Thomas Stoughton
<i>Lycium parishii</i>	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	None	None	G4	S1	2B.3		1980- 01-01	No Photo Available
<i>Malacothamnus parishii</i>	Parish's bush- mallow	Malvaceae	perennial deciduous shrub	Jun-Jul	None	None	GXQ	SX	1A	Yes	1974- 01-01	 © 2021 Keir Morse



	<u><i>Monardella</i></u> <u><i>cæantha</i> ssp.</u> <u><i>hallii</i></u>	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	None	None	G5T3	S3	1B.3	Yes	1974- 01-01	No Photo Available
	<u><i>Monardella</i></u> <u><i>pringlei</i></u>	Pringle's monardella	Lamiaceae	annual herb	May-Jun	None	None	GX	SX	1A	Yes	1974- 01-01	No Photo Available
	<u><i>Muhlenbergia</i></u> <u><i>californica</i></u>	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	None	None	G4	S4	4.3	Yes	1994- 01-01	No Photo Available
	<u><i>Muilla coronata</i></u>	crowned muilla	Themidaceae	perennial bulbiferous herb	Mar- Apr(May)	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
m a	<u><i>Na</i></u> <u><i>stenocarpa</i></u>	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2		1994- 01-01	No Photo Available
m b	<u><i>Nasturtium</i></u> <u><i>ga</i></u> <u><i>elii</i></u>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1		1980- 01-01	No Photo Available
	<u><i>Packera</i></u> <u><i>bernardina</i></u>	San Bernardino ragwort	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974- 01-01	No Photo Available
	<u><i>Pelazoneuron</i></u> <u><i>puberulum</i> var.</u> <u><i>sonorense</i></u>	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2		1994- 01-01	No Photo Available
	<u><i>Perideridia</i></u> <u><i>parishii</i> ssp.</u> <u><i>parishii</i></u>	Parish's yampah	Apiaceae	perennial herb	Jun-Aug	None	None	G4T3T4	S2	2B.2		1974- 01-01	No Photo Available
	<u><i>Phacelia</i></u> <u><i>havensis</i></u>	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	None	None	G4Q	S4	4.3	Yes	1994- 01-01	No Photo Available
	<u><i>Phacelia</i></u> <u><i>stellaris</i></u>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994- 01-01	No Photo Available
	<u><i>Piperia</i></u> <u><i>leptopetala</i></u>	narrow- petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	Yes	2001- 01-01	No Photo Available
	<u><i>Quercus</i></u> <u><i>mangel</i></u> <u><i>nnii</i></u>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	None	None	G3	S3	4.2		1988- 01-01	No Photo Available
	<u><i>Ribes</i></u> <u><i>divaricatum</i> var.</u> <u><i>parishii</i></u>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	None	None	G5TX	SX	1A	Yes	1988- 01-01	No Photo Available
m n	<u><i>Ro</i></u> <u><i>eya</i></u> <u><i>coulteri</i></u>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar- Jul(Aug)	None	None	G4	S4	4.2		1974- 01-01	No Photo Available
	<u><i>Rupertia rigida</i></u>	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	None	None	G4	S4	4.3		1974- 01-01	No Photo Available

<u><i>Schoenus nigricans</i></u>	black bog-rush	Cyperaceae	perennial herb	Aug-Sep	None	None	G4	S2	2B.2		2001-01-01	No Photo Available
<u><i>Senecio aphanactis</i></u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
<u><i>Senecio astephanus</i></u>	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	None	None	G3	S3	4.3	Yes	2006-12-21	No Photo Available
<u><i>Sidalcea hickmanii</i> ssp. <i>parishii</i></u>	Parish's checkerbloom	Malvaceae	perennial herb	(May)Jun-Aug	None	CR	G3T1	S1	1B.2	Yes	1974-01-01	No Photo Available
<u><i>Sidalcea malviflora</i> ssp. <i>dolosa</i></u>	Bear Valley checkerbloom	Malvaceae	perennial herb	May-Aug	None	None	G5T2	S2	1B.2	Yes	2012-06-13	No Photo Available
<u><i>Sidalcea neomexicana</i></u>	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
<u><i>Sidalcea pedata</i></u>	bird-foot checkerbloom	Malvaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Sidothea caryophylloides</i></u>	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	None	None	G4	S4	4.3	Yes	1980-01-01	 ©2021 Keir Morse
<u><i>Sphenopholis obtusata</i></u>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
<u><i>Streptanthus bernardinus</i></u>	Laguna Mountains jewelflower	Brassicaceae	perennial herb	May-Aug	None	None	G3G4	S3S4	4.3	Yes	1980-01-01	No Photo Available
<u><i>Streptanthus campestris</i></u>	southern jewelflower	Brassicaceae	perennial herb	(Apr)May-Jul	None	None	G3	S3	1B.3		1994-01-01	No Photo Available
<u><i>Symphotrichum defoliatum</i></u>	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	Yes	2004-01-01	No Photo Available
<u><i>Trichocoronis wrightii</i> var. <i>wrightii</i></u>	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1		1988-01-01	No Photo Available
<u><i>Trichostema mcranthum</i></u>	small-flowered bluecurls	Lamiaceae	annual herb	Jun-Sep	None	None	G4	S3	4.3		1974-01-01	No Photo Available
<u><i>Yucca brevifolia</i></u>							CC		CBR		2011-12-13	No Photo Available

Showing 1 to 88 of 88 entries

