Appendix E

Biological Resources

E1 Noxious and Invasive Plant Species Within or Near the DCPP Project Site
E2 Regional Special-Status Species Tables
E3 Special-Status Species Accounts
E4 Aquatic Resources Delineation Report

Appendix E1

Noxious and Invasive Plant Species Within or Near the DCPP Project Site

Appendix E1
Noxious and Invasive Plant Species Within or Near the DCPP Project Site

The threat level of each species, as designated by the California Invasive Plant Council (Cal-IPC) is as follows:

- **High** – These species have severed ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- **Moderate** – These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- **Limited** – These species are not invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.
- **Watch** – These species are not currently invasive in California. Assessment has found them to be a high risk for becoming invasive in the future.

Several nonnative plant species were identified in the Project area during 2020 and 2021 surveys. A total of 57 of these are considered noxious or invasive weeds by the CAL-IPC. Table E1-1 lists the noxious and invasive plant species that were identified in the Project area along with the current threat levels as defined by CAL-IPC.

Table E1-1. Noxious and Invasive Plant Species Identified in the Project Area

Scientific Name	Common Name	Location	Threat Level
Ailanthus altissima	Tree-of-heaven	SMVR-SB	Moderate
Asphodelus fistulosus	Onion weed	DCPP	Moderate
Atriplex semibaccata	Australian saltbush	DCPP SMVR-SB	Moderate
Avena barbata	Slender oat	DCPP SMVR-SB SMVR-SM	Moderate
Avena fatua	Wild oat	DCPP SMVR-SB	Moderate
Brachypodium distachyon	Annual false-brome	DCPP SMVR-SM	Moderate

Table E1-1. Noxious and Invasive Plant Species Identified in the Project Area

Scientific Name	Common Name	Location	Threat Level
Brassica nigra	Black mustard	DCPP SMVR-SB	Moderate
Brassica rapa	Field mustard	DCPP SMVR-SB	Limited
Bromus diandrus	Ripgut brome	DCPP SMVR-SB SMVR-SM	Moderate
Bromus hordeaceus	Soft brome	DCPP SMVR-SB	Limited
Carduus pycnocephalus	Italian thistle	DCPP SMVR-SB SMVR-SM	Moderate
Carduus tenuiflorus	Slenderflower thistle	DCPP	Limited
Carpobrotus chilensis	Sea fig	DCPP	Moderate
Carpobrotus edulis	Highway iceplant	SMVR-SB SMVR-SM	High
Centaurea melitensis	Tocalote	DCPP SMVR-SB SMVR-SM	Moderate
Cirsium vulgare	Bull thistle	DCPP SMVR-SB	Moderate
Conium maculatum	Poison hemlock	DCPP SMVR-SB SMVR-SM	Moderate
Cortaderia jubata	Jubatagrass	DCPP	High
Cotula coronopifolia	Common brassbuttons	SMVR-SM	Limited
Cynara cardunculus	Artichoke thistle	DCPP	Moderate
Cynodon dactylon	Bermuda grass	DCPP SMVR-SB	Moderate
Cynosurus echinatus	Hedgehog dogtail	DCPP	Moderate
Dactylis glomerata	Orchard grass	DCPP	Limited
Erodium cicutarium	Redstem filaree	DCPP SMVR-SB SMVR-SM	Limited
Eucalyptus globulus	Blue gum	SMVR-SB	Limited
Festuca myuros	Rat-tail fescue	DCPP SMVR-SB SMVR-SM	Moderate

Table E1-1. Noxious and Invasive Plant Species Identified in the Project Area

Scientific Name	Common Name	Location	Threat Level
Festuca perennis	Italian ryegrass	DCPP SMVR-SB	Moderate
Foeniculum vulgare	Fennel	DCPP SMVR-SB	Moderate
Geranium dissectum	Cutleaf geranium	DCPP	Limited
Glebionis coronaria	Garland chrysanthemum	DCPP	Limited
Helminthotheca echiodes	Bristly ox-tongue	DCPP SMVR-SB	Limited
Hirschfeldia incana	Short-pod mustard	DCPP SMVR-SB SMVR-SM	Moderate
Hordeum marinum	Mediterranean barley	DCPP	Moderate
Hordeum murinum	Hare barley	DCPP SMVR-SB SMVR-SM	Moderate
Hypochaeris glabra	Smooth cat's-ear	DCPP	Limited
Lepidium latifolium	Perennial pepperweed	SMVR-SB	High
Lobularia maritima	Sweet alyssum	SMVR-SB	Limited
Marrubium vulgare	Horehound	DCPP	Limited
Medicago polymorpha	California burclover	DCPP SMVR-SB	Limited
Nicotiana glauca	Tree tobacco	DCPP	Moderate
Oxalis pes-caprae	Bermuda buttercup	DCPP SMVR-SB	Moderate
Pennisetum clandestinum	Kikuyugrass	DCPP	Limited
Pennisetum villosum	Feathertop	DCPP	Watch
Plantago lanceolata	English plantain	DCPP SMVR-SB	Limited
Phalaris aquatica	Harding grass	DCPP	Moderate
Polypogon monspeliensis	Rabbitsfoot grass	DCPP	Limited
Raphanus sativus	Wild radish	DCPP SMVR-SB SMVR-SM	Limited
Rumex crispus	Curly dock	DCPP SMVR-SB	Limited

Table E1-1. Noxious and Invasive Plant Species Identified in the Project Area

Scientific Name	Common Name	Location	Threat Level
Salsola tragus	Russian thistle	DCPP SMVR-SM	Limited
Schinus molle	Peruvian pepper tree	SMVR-SB	Limited
Schismus arabicus	Mediterranean grass	SMVR-SM	Limited
Silybum marianum	Milk thistle	DCPP SMVR-SB	Limited
Sinapus arvensis	Wild mustard	DCPP	Limited
Stipa miliacea var. miliacea	Smilo grass	DCPP SMVR-SB	Limited
Tetragonia tetragonioides	New Zealand spinach	DCPP	Limited
Torilis arvensis	Hedgeparsley	DCPP	Moderate
Trifolium hirtum	Rose clover	DCPP	Limited

Source: CAL-IPC, 2022.

References

CAL-IPC (California Invasive Plant Council). 2022. The CAL-IPC Inventory Database. California Invasive Plant Council, Berkeley, CA. Search conducted March 1, 2022. https://www.cal-ipc.org/plants/inventory/.

Appendix E2

Regional Special-Status Species Tables

Appendix E2
Regional Special-Status Species Tables

The tables in this appendix identify special-status plants and wildlife (terrestrial and marine) known in the region and summarize the species' habitat and distribution, conservation status, and their potential to occur. The tables are found on the following pages.

The potential to occur is based on the five criteria below.

Present	Observed during Proposed Project-specific surveys or recently documented and habitat conditions remain unchanged from the time of the record
High	Known records within 10 miles of the Proposed Project area AND suitable habitat is present, but not detected during Project-specific surveys
Moderate	Proposed Project area is within species' known geographic range, but no known records, and suitable habitat is present OR known records within 10 miles of the Proposed Project area and marginal habitat is present
Low	No known records in Proposed Project area and habitat is marginal OR the species is conspicuous and was not detected during biological surveys
Unlikely	No known records within 10 miles of the Proposed Project area or the site lacks suitable habitat requirements

Table Notes:

- Federal Rankings: FE = Federally Endangered; FT = Federally Threatened; BCC = USFWS Birds of Conservation Concern
- State Rankings: SE = State Endangered; ST = State Threatened; SSC = California Species of Special Concern; SR = State Rare; FP = California Department of Fish and Wildlife (CDFW) Fully Protected, WL = CDFW Watch List, SA = CDFW Special Animal.
- California Rare Plant Ranks (CRPR)
  - CRPR 1A = Presumed extinct in California;
  - CRPR 1B = Rare or endangered in California and elsewhere;
  - CRPR 2 = Rare or endangered in California, more common elsewhere;
  - CRPR 3 = More information needed;
  - CRPR 4 = Limited distribution (Watch List).
  - CRPR Sub-categories: .1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat); .2 = Fairly endangered in California (20 to 80 percent occurrences threatened); .3 = Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known).

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Agrostis hooveri	Hoover's bent grass	1B.2	Feb – Oct	Sandy sites within chaparral, montane woodland, closed-cone coniferous forest, valley, and foothill grassland. 60-765 m.	**DCPP: Moderate -** Suitable habitat present. Recent reported 2-miles from site Proposed Project site.
					PBR: Moderate – Suitable habitat present. Recent reported records near Proposed Project site. A historic record is located adjacent to site
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Aphanisma blitoides	Aphanisma	1B.2	Jun – Sep	Coastal scrub, bluffs, saline sand; <200 m.	**DCPP Unlikely -** Suitable habitat present, outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos luciana	Santa Lucia manzanita	1B.2	Jan – Mar	Shale outcrops, slopes, and upland chaparral near the coast. 100 – 800 m.	**DCPP: Unlikely -** Suitable habitat present, outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos morroensis	Morro manzanita	FT, 1B.1	Jan – Mar	Stabilized sand dunes, sandstones, chaparral. < 200 m.	**DCPP: Unlikely -** Suitable habitat present, outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos osoensis	Oso manzanita	1B.2	Dec –Feb	Dacite (volcanic) outcrops, chaparral. 50 – 375 m.	**DCPP: Unlikely -** Suitable habitat present, outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos pechoensis	Pecho manzanita	1B.2	Jan – Mar	Shale outcrops, chaparral, conifer forest. < 500 m.	**DCPP: High-** Suitable habitat present. Reported records of species at Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos pilosula	Santa Margarita manzanita	1B.2	Dec –Mar	Shale outcrops, slopes, chaparral. 30 – 1,250 m.	**DCPP: Moderate-** Suitable habitat present. Multiple records of species within 5 miles of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos purissima	La Purisima manzanita	1B.1	Feb – Sep	Sandstone outcrops, sandy soil. Chaparral, coastal scrub. 60-470 m.	**DCPP: Unlikely –** Suitable habitat present. No reported records near Proposed Project site. Nearest occurrence is 20 miles away near Santa Maria.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos refugioensis	Refugio manzanita	1B.2	Mar – Oct	On sandstone. Chaparral. 60-765 m.	**DCPP: Unlikely –** Suitable habitat present. Outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos rudis	Sand mesa manzanita	1B.2	Nov – Feb	Sandy soils, chaparral. < 380 m.	**DCPP: Low-** Suitable habitat present. Nearest records are 15 miles southeast of Proposed Project site near Arroyo Grande.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Arctostaphylos tomentosa* ssp. *daciticola	Dacite manzanita	1B.1	Dec –Mar	Only known from one site in SLO County on dacite porphyry buttes. Chaparral, cismontane woodland. About 120m.	**DCPP: Unlikely –** No suitable habitat present. Species requires very specific site conditions. No reported records near Proposed Project site. Nearest records are 9 miles from Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Arenaria paludicola	Marsh sandwort	FE, SE, 1B.1	May – Aug	Growing up through dense mats of *Typha, Juncus, Scirpus,* etc. in freshwater marsh. Sandy soil. 3-170 m.	**DCPP: Low –** Marginal habitat present. No reported records near Proposed Project site. Nearest record is 7 miles from Proposed Project site at Morro Bay.
					PBR: Low – Marginal habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Astragalus didymocarpus* var. *milesianus	Miles' milk-vetch	1B.2	Mar – May	Grassy areas near the coast, clay soils in coastal scrub. < 400 m.	**DCPP: Low –** Suitable habitat present. No reported records near Proposed Project site. Nearest record is located 9 miles to east near San Luis Obispo.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Astragalus nuttallii* var. *nuttallii	Ocean bluff milkvetch	4.2	Jan – Nov	Rock, sandy areas, bluffs; < 250 m	**DCPP: Present –** *A. nuttallii* observed during 2020 surveys and subspecies assumed to be present based on proximity of known population located immediately north of site (PG&E, 2020; 2022a).
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Atriplex coulteri	Coulter's saltbush	1B.2	Mar –Oct	Alkaline or clay soils, open sites, scrub, coastal bluff scrub. < 500 m.	**DCPP: High –** Suitable habitat present. Reported records located at Proposed Project site. Occurrence is less than 1 mile north of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Atriplex serenana* var. *davidsonii	Davidson's saltscale	1B.2	Apr –Oct	Coastal bluffs less < 200 m.	**DCPP: Low –** Suitable habitat present. No reported records near Proposed Project site. Nearest record is 22 miles south of Proposed Project site. Near
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely –No reported records in the vicinity of Proposed Project site.
Bahiopsis laciniata	San Diego County viguiera	4.3	Feb - Aug	Coastal scrub, chaparral slopes. 90 --750 m.	**DCPP: Present –** Occurrence considered anomalous since site is well outside of known range. Plant was likely artificially dispersed to site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Calochortus obispoensis	San Luis mariposa-lily	1B.2	May – July	Dry serpentine, generally open chaparral. 100 – 500 m.	**DCPP: Moderate –** Suitable habitat present. Records less than 7 miles northwest of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Calochortus simulans	La Panza mariposa-lily	1B.3	Apr – July	Sand (often granitic),	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
				grassland, and yellow pine forest. 1,100 m.	**PBR: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Calystegia subacaulis* ssp. *episcopalis	Cambria morning-glory	4.2	Apr – June	Dry, open grassland, scrub, and woodland. 500 m.	**DCPP: Moderate–** Suitable habitat present. Records less than 6 miles northeast of Proposed Project site.
					PBR: Low – Marginal habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No reported records in the vicinity of Proposed Project site.
Camissoniopsis hardhamiae	Hardham's evening-primrose	1B.2	Mar - May	Sandy soil, limestone; disturbed or burned areas in oak woodland and chaparral. 240 – 600 m.	**DCPP: Low–** Marginal habitat present. Records located 9 miles north of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Carex obispoensis	San Luis Obispo sedge	1B.2	Mar – Jun	Springs and stream sides in chaparral, generally on serpentine soils. 800 m.	**DCPP: Moderate–** Suitable habitat present. Records 5 miles north of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Caulanthus californicus	California jewelflower	FE, SE, 1B.1	Feb - May	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; 60 – 1000 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Castilleja densiflora* var. *obispoensis	San Luis Obispo owl's-clover	1B.2	Mar – Jun	Coastal grassland, meadows, and seeps; sometimes in serpentine. < 400 m.	**DCPP: Moderate–** Suitable habitat present. Multiple records 5 miles north of Proposed Project site.
					PBR: Moderate – Suitable habitat present. Recent reported records near Proposed Project site. A historic record is located adjacent to site
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Ceanothus cuneatus* var. *fascicularis	Lompoc ceanothus	4.2	Feb – May	Sandy chaparral. 10-340 m	**DCPP: High –** Suitable habitat present. Species is documented along access road 1 mile east of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Ceanothus impressus* var. *impressus	Santa Barbara ceanothus	1B.2	Apr – Jun	Sandy chaparral. 10-340 m	**DCPP: Unlikely –** Suitable habitat present. Outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Ceanothus impressus* var. *nipomensis	Nipomo Mesa ceanothus	1B.2	Feb – Apr	Sandy substrates, flats, canyons. < 200 m.	**DCPP: Moderate–** Suitable habitat present. Multiple records 5 miles north of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Ceanothus thyrsiflorus* var. *obispoensis	San Luis Obispo ceanothus	1B.1	Feb – Jun	Dacite substrates in association with chaparral, cismontane woodland. 140 – 225 meters.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Centromadia parryi* ssp. *congdonii	Congdon's tarplant	1B.1	Jun – Oct	Terraces, swales in floodplains, grassland, and disturbed sites. < 300 m.	**DCPP: Moderate –** Suitable habitat is present. Records less than 8 miles northeast of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely –No suitable habitat present. No reported records at Proposed Project site.
Chenopodium littoreum	Coastal goosefoot	1B.2	Jun – Oct	Generally sandy soils, dunes. < 40 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chlorogalum pomeridianum* var. *minus	Dwarf soaproot	1B.2	May – Jul	Serpentine outcrops in chaparral. < 750 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chloropyron maritimum* ssp. *maritimum	Salt marsh bird's-beak	FE, SE, 1B.2	May – Oct	Coastal salt marsh. < 10 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chloropyron maritimum* ssp. *palustre	Point Reyes salty bird's-beak	1B.2	Jun – Oct	Marshes and swamps. 0 – 10 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chorizanthe aphanantha	Irish Hills spineflower	1B.1	Apr – Jul	Serpentine soils in scrub and chaparral. 100 –370	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
				m.	**PBR: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chorizanthe breweri	Brewer's spineflower	1B.3	Mar – Jul	Gravel or rocky areas, in serpentine soil. < 60 – 800 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Chorizanthe rectispina	Straight-awned spineflower	1B.3	May – Jul	Sand or gravel. 200 – 600 m.	**DCPP: Low –** Suitable habitat present. No reported records near Proposed Project site. Nearest records are located 14 miles to the southeast in Arroyo Grande.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cicuta maculata* var. *bolanderi	Bolander's water-hemlock	2B.1	Jun – Aug	Coastal, saltmarsh < 200 m	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Cirsium fontinale* var. *obispoense	Chorro Creek bog thistle	FE, SE, 1B.2	Mar –Oct	Serpentine seeps and streams. < 350 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cirsium occidentale* var. *compactum	Compact cobwebby thistle	1B.2	Apr – Jun	Coastal Strand, Northern Coastal Scrub, Coastal Sage Scrub, Chaparral, Coastal Prairie within dunes	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cirsium occidentale* var. *lucianum	Cuesta Ridge thistle	1B.2	Apr – Jul	Chaparral, woodland, or forest openings, often on serpentine. 500 – 750 m.	**DCPP: Unlikely –** Suitable habitat present. No reported records near Proposed Project site. Nearest records is located 15 miles to the east
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cirsium rhothophilum	Surf thistle	ST 1B.2	Apr – Aug	Low, shifting dunes and bluffs. < 20 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cirsium scariosum* var. *loncholepis	La Graciosa thistle	FE, ST, 1B.1	Apr – Jul	Marshes, dune wetlands. < 50 m.	**DCPP: Unlikely –** Suitable habitat present. Outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Low– Marginal habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cladium californicum	California saw-grass	2B.2	Jun –Sep	Generally alkaline marshes, swamps. < 2,150 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cladonia firma	Popcorn lichen	2B.1	n/a	On soil and detritus on stabilized sand dunes, in pure stands or intermixed with other lichens and mosses forming biotic soil crusts, covering areas up to several meters. 30-80 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Clarkia speciosa* ssp. *immaculata	PBR clarkia	FE SR, 1B.2	May – Jul	On ancient sand dunes not far from the coast. Sandy soils; openings. 30-185 m. Chaparral,	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Low – Marginal habitat present. Several recent reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
				cismontane woodland, valley, and foothill grassland.	**SMVR-SB: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Clinopodium mimuloides	Monkey-flower savory	4.2	Jun - Oct	Moist places, stream banks, chaparral, woodland. 400 – 1,800 m.	**DCPP: Moderate –** Suitable habitat present. No reported records near Proposed Project site. Nearest records are 8 miles northeast of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Cordylanthus rigidus* ssp. *littoralis	Seaside bird's-beak	SE, 1B.1	Apr – Oct	Closed-cone coniferous forest, chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Deinandra increscens* ssp. *villosa	Gaviota tarplant	FE, SE, 1B.1	Mar – Oct	Known from coastal terrace near Gaviota; sandy blowouts amid sandy loam soil; grassland/coast scrub ecotone. 10-430 m.	**DCPP: Unlikely –** Marginal habitat present. Outside of geographical range of the species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Deinandra paniculata	Paniculate tarplant	4.2	May – Nov	Grassland, open chaparral and	**DCPP: Moderate –** Suitable habitat present. No reported records near Proposed Project site. Nearest records are 8 miles northeast of the Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
				woodland, disturbed areas, often in sandy soils. < 1,320 m.	**PBR: Moderate –** Suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Delphinium parryi* ssp. *blochmaniae	Dune larkspur	1B.2	Apr – May	Coastal chaparral, sand. < 200 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Delphinium parryi* ssp. *eastwoodiae	Eastwood's larkspur	1B.2	Mar – May	Coastal chaparral, grassland, on serpentine. 100 – 500 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Delphinium umbraculorum	Umbrella larkspur	1B.3	Apr – Jun	Shaded or sunny slopes in chaparral or woodland. 400 – 1,600 m.	**DCPP: Moderate –** Suitable habitat present. No reported records near Proposed Project site. Nearest records are 6 miles east of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Dithyrea maritima	Beach spectaclepod	ST 1B.1	Mar - Aug	Seashores, coastal sand dunes. < 50 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Dudleya abramsii* ssp. *bettinae	Betty's dudleya	1B.2	May – Jul	Rocky outcrops in serpentine grassland. 50 –180 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Dudleya abramsii* ssp. *murina	Mouse-gray dudleya	1B.3	Apr – Jun	Open, rocky slopes, often in shallow serpentine or clay–dominated soil. < 450 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Dudleya blochmaniae* ssp. *blochmaniae	Blochman's dudleya	1B.1	Apr – Jun	Open, rocky slopes, often in shallow serpentine or clay–dominated soil. < 450 m.	**DCPP: Low–** Marginal habitat present. No reported records near Proposed Project site. Nearest records are located 14 miles east of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Erigeron blochmaniae	Blochman's leafy daisy	1B.2	Jun – Oct	Sand dunes and hills, coastal dunes, and coastal scrub. < 70 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Low – Marginal habitat present. A record located 1.3 miles east of the Proposed Project site.
					SMVR-SM: Low – Marginal habitat present. A record located 1.5 miles east of the Proposed Project site.
Eriodictyon altissimum	Indian Knob mountainbalm	FE, SE, 1B.1	Mar – Jun	Sandstone ridges and chaparral. < 270 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Eriodictyon capitatum	Lompoc yerba santa	FE, SR, 1B.2	May - Aug	Sandy soils on terraces. Closed-cone coniferous forest, chaparral, coastal bluff scrub, oak woodland. 60-505 m.	**DCPP: Unlikely –** No suitable habitat present. Outside of geographical range of species. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Eryngium aristulatum* var. *hooveri	Hoover's button-celery	1B.1	July	Vernal pools and seasonal wetlands, occasionally alkaline. < 50 m.	**DCPP: Low –** Marginal habitat present. No reported records near Proposed Project site. Nearest records are located 8 miles east of the Proposed Project site.
					PBR: Low – Marginal habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Extriplex joaquinana	San Joaquin spearscale	1B.2	Apr –Sep	Alkaline soils. < 840 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Fritillaria ojaiensis	Ojai fritillary	1B.2	Feb – May	Rocky slopes, river basins often in serpentine. 300 – 500 m.	**DCPP: Low –** Marginal habitat present. No reported records near Proposed Project site. Nearest record is located 7 miles northeast of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Horkelia cuneata* var. *puberula	Mesa horkelia	1B.1	Mar – Jul	Dry, sandy, coastal chaparral. 70 – 870 m.	**DCPP: Moderate** – Suitable habitat present. No reported records near Proposed Project site. Nearest record is located within 5 miles of the Proposed Project site.
					PBR: Low – Marginal habitat present. Historic record located adjacent to Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Horkelia cuneata* var. *sericea	Kellogg's horkelia	1B.1	Apr – Aug	Old dunes, coastal sand hills. < 200 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Lasthenia californica* ssp. *macrantha	Perennial goldfields	1B.2	Mar – Aug	Grassland, dunes along immediate coast. < 500 m.	**DCPP: Moderate –** Suitable habitat present. A record is located 3 miles north of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Lasthenia glabrata* ssp. *coulteri	Coulter's goldfields	1B.1	Apr – May	Saline places, vernal pools. < 1,000 m.	**DCPP: Low –** Marginal habitat present. A record is in Morro Bay 7 miles north of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Layia carnosa	Beach layia	FE, SE, 1B.1	Mar – Jul	Coastal dunes, coastal scrub (sandy). 0 – 60 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Layia heterotricha	Pale-yellow layia	1B.1	Mar – Jun	Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. 300 – 1705 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Layia jonesii	Jones' layia	1B.2	Mar – May	Open serpentine or clayey slopes. < 300 m.	**DCPP: Moderate –** Suitable habitat present. A record is located 8 miles northeast of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Lupinus ludovicianus	San Luis Obispo County lupine	1B.2	Apr – Jul	Open, grassy areas on limestone, in oak woodland. 50–500 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site
					PBR: Low – Suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Lupinus nipomensis	Nipomo Mesa lupine	FE, SE, 1B.1	Mar – May	Stable dunes. < 25 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Malacothamnus gracilis	Slender bush-mallow	1B.1	May - Oct	Dry, rocky slopes. Chaparral 150-335 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Monardella palmeri	Palmer's monardella	1B.2	Jun – Aug	Chaparral and forest on serpentine. 200 – 800 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Monardella sinuata* ssp. *sinuata	Southern curly-leaved monardella	1B.2	Apr – Sep	Sandy soils, coastal strand, dune and sagebrush scrub, coastal chaparral, and oak woodland. < 300 m.	**DCPP: Moderate –** Suitable habitat present. No reported records near Proposed Project site. Nearest record is located 11 miles east near PBR Beach.
					PBR: Moderate – Suitable habitat present. Recent reported records near Proposed Project site. A historic record is located adjacent to site
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Monardella undulata* ssp. *crispa	Crisp monardella	1B.2	Apr – Nov	Active dunes. < 100 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Monardella undulata* ssp. *undulata	San Luis Obispo monardella	1B.2	Apr – Sep	Stabilized dunes, coastal scrub, stabilized sandy soils. < 200 m.	**DCPP: Low –** Marginal habitat present. No reported records near Proposed Project site. Near records are located 13 miles to southeast in Grover Beach.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No records in the vicinity Proposed Project site.
Monolopia gracilens	Woodland woollythreads	1B.2	Mar – Jul	Serpentine grassland, open chaparral, oak woodland. 100 – 1,200 m.	**DCPP: High –** Suitable habitat present. Record is located along access road within 3 miles of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Muhlenbergia utilis	Aparejo grass	2B.2	Oct – Mar	Wet sites along streams, ponds. 250 – 1,000 m.	**DCPP: Moderate –** Suitable habitat present. Record is located along access road within 12 miles of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Nasturtium gambelii	Gambel's water cress	FE, ST, 1B.1	May – Aug	Marshes, streambanks, lake margins. < 350 m.	**DCPP: Low–** Suitable habitat present. No reported records near Proposed Project site. Occurrences restricted to lakes within and south of the Oceano dunes

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					PBR: Low – Marginal habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Navarretia fossalis	Spreading navarretia	FT, 1B.1	Apr - Jun	Chenopod scrub, marshes and swamps (shallow freshwater), playas, vernal pools. 30 – 655 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Nemacaulis denudata* var. *denudata	Coast woolly-heads	1B.2	Mar - Aug	Beaches, dune scrub. < 100 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Nemacladus secundiflorus* var. *robbinsii	Robbins' nemacladus	1B.2	Apr – Jun	Chaparral, valley and foothill grassland. 350 – 1700 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
Orobanche parishii* ssp. *brachyloba	Short-lobed broomrape	4.2	Apr - Oct	Sandy soil near beaches; reported to grow on *Isocoma menziesii* and other shrubs. 3-305 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Piperia michaelii	Michael's rein orchid	4.2	Apr –Aug	Generally dry sites, coastal scrub, woodland, and mixed–evergreen or closed-cone pine forest. < 700 m.	**DCPP: Moderate –** Suitable habitat present. Records are located within 5 mile of Proposed Project site at Montaña de Oro State Park.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Plagiobothrys uncinatus	Hooked popcornflower	1B.2	Apr – May	Chaparral, canyon sides, rocky outcrops; ± fire follower. 300 – 600 m.	**DCPP: Low –** Suitable habitat present. No reported records near Proposed Project site. Nearest record is located 15 miles northeast of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Poa diaboli	Diablo Canyon blue grass	1B.2	Mar – Apr	Thin soils on Edna shale slopes, upper coastal scrub, live-oak woodland, Bishop pine forest, near coast. 120 – 400 m.	**DCPP: High –** Suitable habitat present. Records are located within 1 mile of Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Sanicula hoffmannii	Hoffman's sanicle	4.3	Mar – May	Shrubby coastal hills, pine woodland. < 500 m.	**DCPP: Present –** Observed in a variety of upland habitats during surveys (PG&E, 2020; 2022a).
					PBR: Low – Suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Sanicula maritima	Adobe sanicle	SR, 1B.1	Apr – May	Coastal, grassy, open wet meadows, ravines. ± 150 m.	**DCPP: Moderate –** Suitable habitat present. Records are located within 9 miles north of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Scrophularia atrata	Black-flowered figwort	1B.2	Apr – Jul	Calcium, diatom–rich soils. Elevation < 400 m.	**DCPP: Moderate –** Suitable habitat present. Records are located within 7 miles east of the Proposed Project site.
					PBR: Present – Species was observed on site during surveys (PG&E, 2020).
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Senecio aphanactis	Chaparral ragwort	2B.2	Feb – May	Alkaline flats, dry open rocky areas; 10 – 550 m.	**DCPP: High –** Suitable habitat present. Records are located within 7 miles east of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Sidalcea hickmanii* ssp. *anomala	Cuesta Pass checkerbloom	1B.2	May – Jun	Closed-cone coniferous forest, chaparral. 600 – 800 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Streptanthus albidus* ssp *peramoenus	Most beautiful jewelflower	1B.2	Apr - Sep	Serpentine outcrops, on ridges and slopes in Chaparral, valley and foothill grassland, cismontane woodland. 90-1040 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Suaeda californica	California seablite	FE 1B.1	Jul – Oct	Margins of coastal salt marshes. < 5 m.	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Sulcaria isidiifera	Splitting yarn lichen	1B.1	n/a	On branches of oaks and shrubs in old growth coastal scrub. 20-55 m	**DCPP: Low –**Marginal suitable habitat present. No reported records near Proposed Project site. Nearest record is located 3 miles north of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Sulcaria spiralifera	Twisted horsehair lichen	1B.2	n/a	Coastal dunes	**DCPP: Unlikely –** No suitable habitat present. No reported records near Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records at Proposed Project site.
Symphyotrichum defoliatum	San Bernardino aster	1B.2	Jul – Nov	Grassland, disturbed places. < 2,050 m	**DCPP: Unlikely –** Suitable habitat present. No reported records near Proposed Project site. known range does not include coastal San Luis Obispo County.
					PBR: Low – Suitable habitat present. Reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Trifolium hydrophilum	Saline clover	1B.2	Apr – Jun	Fresh or salt marshes, open areas in alkaline soils, vernal pools. < 300 m.	**DCPP: Moderate –** Suitable habitat present. Nearest record is located 4 miles of the Proposed Project site.
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
Tropidocarpum capparideum	Caper–fruited tropidocarpum	1B.1	Mar - Apr	Alkaline soils, low hills, valleys. < 400 m.	**DCPP: Unlikely –**Marginal habitat present. No reported records near Proposed Project site.

Table E2-1. Regional Special-Status Plants

Scientific Name	Common Name	Status	Blooming	Habitat	Likelihood of Occurrence
					PBR: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SB: Unlikely – No suitable habitat present. No reported records near Proposed Project site.
					SMVR-SM: Unlikely – No suitable habitat present. No reported records near Proposed Project site.

Sources: CCH, 2022; CDFW, 2022a; CDFW, 2022b; CNPS, 2022

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
Invertebrates				
Bombus crotchii	Crotch's bumble bee	SA	Occurs in open grassland and scrub habitats in coastal California east to the Sierra-Cascade crest and south to Mexico. Nests in small burrows in the ground.	**DCPP: Low –** Suitable habitat present. Nearest recent record (2019) located near Highway 166 approximately 40 miles southeast of site.
				PBR: Low – Suitable habitat present. Nearest recent record (2019) located near Highway 166 approximately 26 miles east of site.
				SMVR-SB: Low – Marginal habitat present. Nearest recent record (2017) located along Santa Agueda Creek approximately 30 miles southeast of site.
				SMVR-SM: Low – Marginal habitat present. Nearest recent record (2017) located along Santa Agueda Creek approximately 30 miles southeast of site.
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in small, clear-water sandstone-depression pools and grassed swales, earth slump, or basalt-flow depression pools.	**DCPP: Unlikely –** No suitable habitat present. Nearest recent record (2013) located east of Highway 101 approximately 11 miles east of site.
				PBR: Unlikely – No suitable habitat present. Nearest recent record (2013) located along edge of southeast San Luis Obispo approximately 7 miles north of site.
				SMVR-SB: Unlikely – No suitable habitat present. Nearest record (2006) located at Santa Maria Public Airport approximately 3 miles southeast of site.
				SMVR-SM: Unlikely – No suitable habitat present. Nearest record (2006) located at Santa Maria Public Airport approximately 3 miles south of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
***Danaus plexippus* pop. 1**	Monarch - California overwintering population	FC	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**DCPP: Low –** No suitable roosting habitat present; however, may occur during migration to nearby roosting sites. Nearest recent record (2014) located approximately 4 miles north near Montana de Oro State Park.
				PBR: High – Suitable roosting habitat present. Nearest recent record (2014) located along Price Canyon Road approximately 0.25-mile south of site.
				SMVR-SB: High – Suitable roosting habitat present in eucalyptus groves on site. Several records identified around Santa Maria within 5 miles of site.
				SMVR-SM: Low – No suitable roosting habitat present; however, may occur during migration to nearby roosting sites. Several records identified around Santa Maria within 5 miles of site.
Helminthoglypta walkeriana	Morro shoulderband (=banded dune) snail	FE	Restricted to the coastal strand in the immediate vicinity of Morro Bay. Inhabits the duff beneath *Haplopappus, Salvia, Dudleya*, and *Mesembryanthemum* within coastal dunes and coastal scrub.	**DCPP: Low –** No suitable habitat present and site is outside of known geographical range of the species. Several recent records located in and around Montana de Oro State Park within 10 miles north of site.
				PBR: Unlikely – No suitable habitat present and site is outside of known geographical range of the species. Nearest recent records located in and around Montana de Oro State Park approximately 17 miles northwest of site.
				SMVR- SB: Unlikely – No suitable habitat present and site is outside of geographical range of the species. Nearest recent records located in and around Montana de Oro State Park over 30 miles northwest of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely – No suitable habitat present and site is outside of geographical range of the species. Nearest recent records located in and around Montana de Oro State Park over 30 miles northwest of site.
Fish				
Gasterosteus aculeatus williamsoni	Unarmored three spine stickleback	FE, SE, FP	Requires cool (<24 C), clear water with abundant vegetation in backwaters, and among emergent vegetation at the stream edge in small Southern California streams.	**DCPP: Unlikely –** Suitable habitat present. No recorded records within the vicinity of the Proposed Project site. Nearest record is in San Antonio Creek, Vandenberg on Airforce Base 30 miles south.
				PBR: Unlikely – N No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
				SMVR-SB: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
Gila orcuttii	Arroyo chub	SSC	Require slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates. Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave, and San Diego River basins.	**DCPP: Unlikely –** Suitable habitat present in Diablo Creek. Proposed Project site at the northern extent of the species range. No recorded records within the vicinity of the Proposed Project site.
				PBR: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
				SMVR-SB: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
***Oncorhynchus mykiss irideus* pop. 9**	Steelhead - south-central California coast DPS	FT	DPS includes naturally spawned anadromous steelhead originating below natural and manmade impassable barriers from the Pajaro River to the Santa Maria River.	**DCPP: Present –** Suitable habitat present in Diablo Creek. Species observed during surveys in 2020 (PG&E, 2020).
				PBR: Unlikely – No suitable habitat present. The species is documented to occur in PBR Creek adjacent to the Proposed Project site.
				SMVR-SB: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely – No suitable habitat present. No recorded records within the vicinity of the Proposed Project site.
Amphibians				
***Ambystoma californiense* pop. 2**	California tiger salamander - Santa Barbara County DPS	FE, ST, WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**DCPP: Low –** Not observed during habitat assessments (PG&E, 2022b). Marginal aquatic and upland habitat present at Diablo Creek and suitable aquatic and upland habitat present at Tom's Pond. Nearest record located approximately 25 miles southeast in Santa Maria, but large data gap in Project area.
				PBR: Unlikely – No suitable aquatic or upland habitat present and site is outside of known geographic range of the species. Nearest records located around Santa Maria approximately 19 miles south of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SB: Low – No suitable aquatic habitat and marginal upland habitat present. Intensive disturbance between site and source populations inhibits dispersal. Not observed during 2021 reconnaissance surveys. Nearest known breeding pond (GUAD-3) located approximately 1 mile southeast of site (PG&E, 2022c).
				SMVR-SM: Low – No suitable aquatic habitat and marginal upland habitat present. Intensive disturbance between site and source populations inhibits dispersal. Not observed during 2021 reconnaissance surveys. Nearest known breeding pond (SAMA-2) located approximately 3 miles south of site (PG&E, 2022d).
Anaxyrus californicus	Arroyo toad	FE, SSC	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in valley-foothill and desert riparian, and desert wash habitats	**DCPP: Unlikely –** No suitable habitat present and site is outside of the known geographic range of the species. Nearest record (1992) located along the Santa Maria River approximately 45 miles southeast of site.
				PBR: Unlikely – No suitable habitat present and site is outside of the known geographic range of the species. Nearest record (1992) located along the Santa Maria River approximately 26 miles southeast of site.
				SMVR-SB: Unlikely – No suitable habitat present. Nearest record (1992) located along the Santa Maria River approximately 12 miles east of site.
				SMVR-SM: Unlikely – No suitable habitat present. Nearest record (1992) located along the Santa Maria River approximately 10 miles southeast of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
Batrachoseps minor	Lesser slender salamander	SSC	Endemic to California where it occurs in chaparral and woodlands along the southern end of the Coast Ranges.	**DCPP: Low –** Suitable habitat present. Nearest recent records are located approximately 18 miles northeast on the Los Padres National Forest (2008) and approximately 26 miles east along Trout Creek. Although no known records within 10 miles of the site, the record near Hi Mountain Campground may represent a southern expansion of the current range.
				PBR: Unlikely – Marginal habitat present and site is outside of known geographic range of the species. Nearest recent record (2020) located along Trout Creek approximately 15 miles northeast of site.
				SMVR-SM: Unlikely – No suitable habitat present and site is outside of the known geographic range of the species.
				SMVR-SB: Unlikely – No suitable habitat present and site is outside of the known geographic range of the species.
Rana boylii	Foothill yellow-legged frog	SE, SSC	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	**DCPP: Unlikely –** No suitable habitat present. Nearest records occur along Reservoir Canyon approximately 13 miles east of the site; however, these populations are presumed extirpated.
				PBR: Unlikely – No suitable habitat present. Nearest record is located along Arroyo Grande Creek approximately 6 miles east of the site; however, records indicate that the species is extirpated.
				SMVR-SB: Unlikely – No suitable habitat present. Nearest record (1940) is located along Alamo Creek approximately 14 miles northeast of site; however, records indicate that the species is extirpated.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SB: Unlikely – No suitable habitat present. Nearest record (1940) is located along Alamo Creek approximately 11 miles northeast of site; however, records indicate that the species is extirpated.
Rana draytonii	California red-legged frog	FT, SSC	Lowlands and foothills in or near sources of water with shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat	**DCPP: Present –** Species observed within Diablo Creek at outlet pool culvert of 230 kV yard and Tom's Pond during surveys (PG&E 2020; 2022e). Suitable breeding habitat present in Diablo Creek and suitable aestivation sites present throughout vegetated upland areas.
				PBR: High – Suitable breeding and upland habitat present. Nearest record (2005) located adjacent to PBR Creek just over 1 mile north of site.
				SMVR-SB: Low – No suitable breeding habitat present and marginal upland aestivation habitat present. Multiple records located within 1-mile of the Proposed Project site.
				SMVR-SM: High – No suitable breeding habitat present. Suitable upland aestivation habitat present. Recent record located within 0.2-miles of the Proposed Project site in Hobbs Basin.
Spea hammondii	Western spadefoot	SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**DCPP: Unlikely –** Nearest recent record (2017) located approximately 30 miles southeast near Suey Creek. Suitable breeding habitat is not present.
				PBR: Unlikely – North of known range Marginal habitat present. No records present within the vicinity of the Proposed Project site.
				SMVR-SB: Low – No suitable breeding habitat present and marginal upland habitat present. Nearest recent record (2019) located along foothills of the Casmalia Hills approximately 2 miles south of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Low – Marginal aquatic habitat located adjacent to site and marginal upland habitat present at site. Nearest record (2011) located east of Highway 101 approximately 3.5 miles southeast of site.
Taricha torosa	Coast Range newt	SSC	Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs, and slow-moving streams.	**DCPP: Low –** Suitable breeding habitat present in Diablo Creek and suitable aestivation sites present in adjacent upland habitat; however, nearest record (2003) located near Water Canyon approximately 16 miles northeast of site. Not observed during surveys.
				PBR: Unlikely – No suitable breeding habitat present and marginal upland habitat present adjacent to PBR Creek. Nearest record (2003) located near Water Canyon approximately 14.5 miles north of site. Not observed during surveys.
				SMVR-SB: Unlikely – No suitable habitat present and site is outside of known geographic range of the species. No records within 10 miles of site.
				SMVR-SM: Unlikely – No suitable habitat present and site is outside of known geographic range of the species. No records within 10 miles of site.
Reptiles				
Anniella pulchra	California legless lizard	SSC	Sandy or loose loamy soils with a high moisture content under sparse vegetation in chaparral, coastal dunes, and coastal scrub.	**DCPP: High –** Suitable habitat present. Nearest recent record (2020) located approximately 3 miles upstream in Diablo Canyon. Several additional records within 10 miles of site.
				PBR: High – Suitable habitat present. Nearest recent record (2018) located in unnamed canyon approximately 1 mile northeast of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SB: High – Suitable habitat is present in areas with loose soils. Multiple records located within 10 miles with nearest record (1986) located near Guadalupe Lake approximately 1 mile southeast of site.
				SMVR-SB: High – Suitable habitat is present in areas with loose soils. Multiple records located within 10 miles with nearest record (2010) located near Black Road approximately 1 mile west of site.
Emys marmorata	Western pond turtle	SSC	Perennial ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation and basking sites, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**DCPP: Moderate –** Not observed during surveys; however, suitable habitat is present in Diablo Creek. Nearest recent record (2004) located along Islay Creek approximately 4 miles north of site.
				PBR: High – Suitable aquatic habitat adjacent to site and suitable upland habitat present at site. Nearest records located along PBR Creek immediately adjacent to site.
				SMVR-SB: Low – No suitable aquatic habitat and marginal upland aestivation and egg laying sites present. Nearest record (1995) located near Black Road approximately 1 mile southeast of site.
				SMVR-SB: High – Suitable aquatic habitat located adjacent to site and suitable upland aestivation and egg laying sites present. Nearest record (1995) located near Black Road approximately 2 miles southwest of site.
Phrynosoma blainvillii	Coast horned lizard	SSC	Most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, loose soil for burial, and native ants for diet.	**DCPP: High –** Suitable habitat is present. Nearest recent record (2021) located north of Diablo Canyon Road approximately 2 miles southeast of site.
				PBR: Unlikely – No suitable habitat present. Nearest recent record (2020) located in Newsom Canyon approximately 5.5 miles east of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SB: Low – Marginal habitat present. Nearest recent record (2021) located near intersection of Betteravia Road and Highway 101 approximately 5.5 miles east of site.
				SMVR-SM: Low – Marginal habitat present. Nearest recent record (2021) located near intersection of Betteravia Road and Highway 101 approximately 3 miles southeast of site.
Thamnophis hammondii	Two-striped gartersnake	SSC	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth from sea level to about 2,150 m elevation.	**DCPP: Moderate –** Suitable habitat present along Diablo Creek and Drainage 1 at site. Nearest recent record (2019) located near Edna Ranch Road approximately 16 miles east of site.
				PBR: Moderate – Suitable aquatic habitat present along PBR Creek. Nearest recent record (2019) located near Edna Ranch approximately 6 miles northeast of site.
				SMVR-SB: Unlikely – No suitable habitat present. Nearest record (2008) located north of Guadalupe-Nipomo Dunes Preserve approximately 8 miles northwest of site.
				SMVR-SM: Low – Marginal habitat present adjacent to site. Nearest record (2008) located north of Guadalupe-Nipomo Dunes Preserve approximately 10 miles northwest of site.
Birds				
Agelaius tricolor	Tricolored blackbird	SSC	Needs nest sites near open, fresh water, protected habitat (such as cattails or tall rushes), and suitable feeding areas (e.g., pastures, rice fields, or grassland).	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable nesting and marginal foraging habitat present. Nearest recent record (2020) located near See Canyon Road approximately 8 miles southeast of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable habitat present. Nearest record (1996) located off Corbett Canyon Road approximately 4 miles northeast of site.
				SMVR- SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest recent record (2021) located near Black Road and Highway 101 approximately 2.5 miles south of site.
				SMVR-SM: Unlikely (Nesting)/Low (Foraging) – No suitable nesting habitat and marginal foraging habitat present. Nearest recent record (2021) located near Black Road and Highway 101 approximately 4 miles south of site.
Aquila chrysaetos	Golden eagle	FP, WL, BCC	Semi-open and open habitats including tundra, open coniferous forest, and grasslands. Common in mountain areas but also found around wetlands and estuarine areas. Very large nests commonly on cliff edges.	**DCPP: Unlikely (Nesting)/High (Foraging) –** Suitable nesting habitat is not present; however, suitable foraging habitat occurs throughout the general area. Nearest recent record (2016) identified a foraging individual located at western end of Crowbar Canyon approximately 1 mile north of site.
				PBR: Unlikely (Nesting)/Low (Foraging) – No suitable breeding habitat and marginal foraging habitat present. No nesting records within 10 miles of site.
				SMVR-SB: Unlikely (Nesting)/Low (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records within 10 miles of site.
				SMVR-SM: Unlikely (Nesting)/Low (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records within 10 miles of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
Asio otus	Long-eared owl	SSC	May be found breeding along the Pacific in southern California to Mexico. Much more broadly distributed across North America during the non-breeding season. Nests in dense conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or adjacent to foraging habitat that includes grasslands, meadows, or shrublands.	**DCPP: Low (Nesting)/Low (Foraging) -** Marginal nesting and foraging habitat present. Nearest recent record (2016) located near Pozo approximately 21 miles northeast of site.
				PBR: Low (Nesting)/Low (Foraging) – Marginal nesting and foraging habitat present. Nearest recent record (2016) located in Garcia Mountains approximately 16 miles northeast of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest recent record (2017) located in the Caliente Range approximately 36 miles northeast of site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest recent record (2017) located in the Caliente Range approximately 32.5 miles northeast of site.
Athene cunicularia	Burrowing owl	SSC, BCC	Open, dry annual, or perennial grasslands, deserts, and scrublands with low-growing vegetation. Subterranean nester. Dependent on the presence of California ground squirrel burrows.	**DCPP: Unlikely (Nesting)/High (Overwintering) –** Nearest recent records (2015, 2016) identified overwintering individuals located near Pecho Valley Road approximately 1 mile northwest. No nesting records within 10 miles of site. Suitable overwintering habitat present.
				PBR: Unlikely (Nesting)/Moderate (Overwintering) – No suitable habitat present. Nearest recent record (2013) located near Tank Farm Road approximately 7 miles north of site.
				SMVR-SB: Unlikely (Nesting)/High (Overwintering) – Suitable over wintering habitat present. Recent record located 1 mile east of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/High (Overwintering) – Suitable over wintering habitat present. Recent records located 2 mile west of the Proposed Project site.
Botaurus lentiginosus	American bittern	SA	Uncommon and local in marshes. In winter, moves to areas where water bodies do not freeze, especially near the coast where they may occasionally use brackish marshes.	**DCPP: Unlikely (Nesting)/Unlikely (Wintering) -** No suitable nesting or wintering habitat present. Nearest recent record (2022) located at Oso Flaco Lake approximately 18 miles southeast of the site.
				PBR: Unlikely (Nesting)/Unlikely (Wintering) – No suitable nesting or wintering habitat present. Nearest recent record (2022) located at Oso Flaco Lake approximately 12 miles east of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Wintering) – No suitable nesting or wintering habitat present. Nearest recent record (2022) located at Oso Flaco Lake approximately 10 miles northwest of site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Wintering) – No suitable nesting or wintering habitat present. Nearest recent record (2022) located at Oso Flaco Lake approximately 11 miles northwest of site.
Brachyramphus marmoratus	Marbled murrelet	FT, SE	Breeds in coniferous forests near the coast where it nests high in treetops. Winters at sea.	**DCPP: Unlikely (Nesting)/Unlikely (Wintering) –** No nesting habitat present. Nearest recent record (2021) located in winter near Spyglass Ridge approximately 11 miles southeast of site.
				PBR: Unlikely (Nesting)/Unlikely (Wintering) – No nesting habitat present. Nearest recent record (2021) located in winter approximately 2 miles northeast of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Wintering) – No suitable habitat present and site is outside of the known geographic range of the species. No records within 10 miles of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/Unlikely (Wintering) – No suitable habitat present and site is outside of the known geographic range of the species. No records within 10 miles of site.
Buteo swainsoni	Swainson's hawk	ST, BCC	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Prefers agricultural areas for foraging.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** Site is located outside of the current breeding range of the species and no suitable habitat present. Nearest recent record (2022) located near California Polytechnic State University approximately 12 miles northeast of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – Site is located outside of the current breeding range of the species and no suitable habitat present. Nearest recent record (2022) located near California Polytechnic State University approximately 11 miles north of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – Site is located outside of the current breeding range of the species and no suitable habitat present. Nearest recent record (2021) located near New Cuyama approximately 46 miles east of site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – Site is located outside of the current breeding range of the species and no suitable habitat present. Nearest recent record (2021) located near New Cuyama approximately 43 miles east of site.
Charadrius nivosus nivosus	Western snowy plover	FT, SSC, BCC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting. Forage on invertebrates in wet sand and edges of salt marshes, salt ponds, and lagoons.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable breeding or foraging habitat present. Nearest recent record (2016) located along the Morro Bay shoreline approximately 6 miles north of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Nearest recent record (2016) located along the shoreline of PBR Beach approximately 1 mile southwest of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Nearest recent record (2016) located along the shoreline of Oceano Dunes State Vehicular Recreational Area approximately 10 miles northwest of site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Nearest recent record (2016) located along the shoreline of Oceano Dunes State Vehicular Recreational Area approximately 11 miles northwest of site.
Circus hudsonius	Northern harrier	SSC	Prefers open country, grasslands, steppes, wetlands, meadows, agricultural fields. Roosts and nests on the ground in shrubby vegetation often at the edges of marshes. Permanent resident of coastal areas in California.	**DCPP: Unlikely (Nesting)/Moderate (Foraging) –** No suitable nesting habitat and suitable foraging habitat present. Nearest recent record (2021) located near Corallina Cove approximately 4 miles northwest of site. Site is outside of the
				PBR: Unlikely (Nesting)/Moderate (Foraging) – No suitable nesting habitat and suitable foraging habitat present. Nearest recent record (2021) located within the PBR Dunes Natural Preserve located approximately 3 miles south of site.
				SMVR-SB: Unlikely (Nesting)/Moderate (Foraging) – No suitable nesting habitat and suitable foraging habitat present. Nearest recent record (2022) located along Bull Canyon Road approximately 8 miles northeast of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/Moderate (Foraging) – No suitable nesting habitat and suitable foraging habitat present. Nearest recent record (2022) located along Bull Canyon Road approximately 5 miles northeast of site.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT, SE, BCC	Dense woodlands and low foliage near slow moving water bodies. Forages in cottonwood trees and builds nests in trees and shrubs. Current CA range limited to Sacramento and Kern Rivers.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable breeding or foraging habitat present. Site is outside of current known range for the species. No recent records within 10 miles of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Site is outside of current known range for the species. No recent records within 10 miles of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Site is outside of current known range for the species. No recent records within 10 miles of site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. Site is outside of current known range for the species. No recent records within 10 miles of site.
Elanus leucurus	White-tailed kite	FP	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**DCPP: Moderate (Nesting)/Moderate (Foraging) –** Suitable breeding and foraging habitat present. Nearest record (1997) located near Camp San Luis Obispo approximately 10 miles northeast of site.
				PBR: Unlikely (Nesting)/Low (Foraging) - No suitable breeding habitat present. Suitable foraging habitat present. Nearest recent record (2017) located near Islay Hill Park located approximately 7 miles north of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SB: Unlikely (Nesting)/High (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records in the vicinity of the Proposed Project site. Multiple foraging observation within the vicinity of the Proposed Project.
				SMVR-SM: Unlikely (Nesting)/High (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records in the vicinity of the Proposed Project site. Multiple foraging observation within the vicinity of the Proposed Project.
Empidonax traillii extimus	Southwestern willow flycatcher	FE, SE		**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** Nearest record (1989) located along the Santa Ynez River over 50 miles southeast of site. Marginal breeding and foraging habitat present.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – Marginal breeding and foraging habitat present along PBR Creek adjacent to site. Nearest record (1989) located along the Santa Ynez River approximately 43 miles southeast of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) -
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging)
Falco peregrinus anatum	American peregrine falcon	FP	Found near water, forages for shorebirds and ducks on shorelines and mudflats. Nests on buildings, water towers, cliffs, power pylons, and other tall structures.	**DCPP: Present –** Species observed perched north of Diablo Creek at site (PG&E, 2020). Suitable terrestrial breeding habitat present along adjacent cliffs; however, suitable foraging habitat present throughout site and surrounding open space.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				PBR: Unlikely (Nesting)/Moderate (Foraging) – No suitable breeding habitat present. Suitable foraging habitat present. Nearest recent record (2013) located along the shore near Guadalupe Nipomo Dunes Preserve approximately 12 miles south of site.
				SMVR-SB: Unlikely (Nesting)/High (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records in the vicinity of the Proposed Project site. Multiple foraging observation within the vicinity of the Proposed Project.
				SMVR-SM: Unlikely (Nesting)/High (Foraging) – No suitable nesting habitat present. Suitable foraging habitat present. No nesting records in the vicinity of the Proposed Project site. Multiple foraging observation within the vicinity of the Proposed Project.
Gymnogyps californianus	California condor	FE, SE, FP	Nests in caves, crevices, behind rock slabs, or on large ledges on high sandstone cliffs. Requires vast expanses of open savannah, grasslands, and foothill chaparral with cliffs, large trees and snags for roosting.	**DCPP: Unlikely (Nesting)/Low (Foraging) –** No suitable breeding habitat present. May occur as a rare forager in open space areas surrounding site. Nearest recent record (2018) located at Laguna Lake Park Open Space approximately 10 miles northeast of site.
				PBR: Unlikely (Nesting)/Low (Foraging) – No suitable breeding habitat present. May occur as a rare forager in open spaces around site. Nearest recent record (2018) located at Laguna Lake Park Open Space approximately 9 miles north of site.
				SMVR-SB: Unlikely (Nesting)/Low (Foraging)
				SMVR-SM: Unlikely (Nesting)/Low (Foraging)

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
Haliaeetus leucocephalus	Bald eagle	SE, FP	Habitat includes rivers and lakes with adjacent woodlands. Large bodies of water are always associated with breeding populations.	**DCPP: Unlikely (Nesting)/Moderate (Foraging) –** No suitable breeding habitat present; however, may forage throughout the general area. Several recent records located along southern shore of Morro Bay less than five miles from site.
				PBR: Unlikely (Nesting)/Low (Foraging) – No suitable breeding or foraging habitat present. Nearest recent record (2022) located at Lopez Lake approximately 10 miles northeast of site.
				SMVR-SB: Unlikely (Nesting)/Low (Foraging)
				SMVR-SM: Unlikely (Nesting)/Low (Foraging)
Lanius ludovicianus	Loggerhead shrike	SSC BCC	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 dense shrubs and brush for nesting.	**DCPP: Low (Nesting)/Moderate (Foraging) –** Marginal nesting habitat present; however, may forage throughout the general region. Nearest recent record (2019) located in Los Osos Valley approximately 8 miles northeast of site.
				PBR: Low (Nesting)/Moderate (Foraging) – No suitable breeding habitat present; however, may forage throughout the general region. Nearest recent record (2021) located near PBR Dunes Natural Preserve approximately 4.5 miles south of site.
				SMVR-SB: Low (Nesting)/Moderate (Foraging) – Marginal breeding and foraging habitat present. Several recent breeding season records are located within 5 miles of the Proposed Project site.
				SMVR-SM: Low (Nesting)/Moderate (Foraging) – Marginal breeding and foraging habitat present. Several recent breeding season records are located within 3 miles of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
Laterallus jamaicensis coturniculus	California black rail	FE, SE, BCC	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable habitat present. Nearest record (2009) located along southern shoreline of Morro Bay approximately 8 miles north of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable habitat present. Nearest record (1966) located around several lakes adjacent to PBR Dunes Natural Preserve located approximately 5.5 miles south of site. No recent records within 10 miles of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Pelecanus occidentalis	Brown pelican	FP	Estuarine, marine subtidal, and marine pelagic waters along the California coast. Breeds on the Channel Islands.	**DCPP: Present –** Species observed flying along the coastal bluffs immediately adjacent to site during surveys (PG&E, 2020). Site is outside of known breeding range and marginal foraging habitat present.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest recent record (2016) located in foothills adjacent to Spyglass Ridge approximately 3 miles northwest of site. May be observed at site during flight.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Progne subis	Purple martin	SSC	Summer resident, breeding in low-elevation coniferous forests and woodlands. Nests in cavities of trees or manmade structures.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable nesting or foraging habitat present. Nearest record (2003) located near Trout Creek approximately 19 miles northeast of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest record (2003) located near Trout Creek approximately 15 miles north of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) - No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
Rallus obsoletus obsoletus	California Ridgway's rail	FE, SE, FP	Found in salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation. Requires dense growth of either pickleweed or cordgrass for nesting or escape cover; feeds on mollusks and crustaceans.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Setophaga petechia	Yellow warbler	SSC	Riparian plant associations preferring willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** Marginal breeding and foraging habitat present. Nearest record (1999) located along the Sisquoc River approximately 40 miles southeast of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – Marginal nesting and foraging habitat present. Nearest record (1999) located along the Sisquoc River approximately 28 miles southeast of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) - No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) - No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
Sternula antillarum browni	California least tern	FE, SE, FP	Nests along the coast from San Francisco Bay to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates, sand beaches, alkali flats, landfills, or paved areas.	**DCPP: Unlikely (Nesting)/Low (Foraging) –** Nearest recent record (2021) located approximately 4.5 miles southeast of site; however, no suitable breeding or foraging habitat present. May forage offshore near site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – No suitable nesting or foraging habitat present. Nearest recent record (2021) located at PBR Preserve approximately 1 mile northwest of site. May be observed in flight.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) – No suitable breeding or foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Vireo bellii pusillus	Least Bell's vireo	FE, SE		**DCPP: Unlikely (Nesting)/Unlikely (Foraging) –** Marginal nesting and foraging habitat present. No records within 10 miles of site.
				PBR: Unlikely (Nesting)/Unlikely (Foraging) – Marginal nesting and foraging habitat present. No records within 10 miles of site.
				SMVR-SB: Unlikely (Nesting)/Unlikely (Foraging) - No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely (Nesting)/Unlikely (Foraging) - No suitable breeding or foraging habitat present. No recent records located within the vicinity of the Proposed Project site.
Mammals				
Antrozous pallidus	Pallid bat	SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. May roost in old buildings and bridges. Very sensitive to disturbance of roosting sites.	**DCPP: Moderate –** Suitable roosting habitat present in structures at site. Nearest record (2000) located within developed area of San Luis Obispo approximately 12 miles northeast of site.
				PBR: Low – Marginal roosting habitat present. Nearest record (2000) located within developed area of San Luis Obispo approximately 9 miles north of site.
				SMVR-SB: Low – Marginal roosting habitat present. Suitable foraging habitat present. No recent record located within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Low – Marginal roosting habitat present. Suitable foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Bassariscus astutus	Ringtail	FP	Rocky outcrops, canyons, or talus slopes in deserts, chaparral; woodlands of oak, pinyon pine, and juniper; montane conifer forests; and especially riparian for the abundant prey. From sea level up to 9,500 ft. (2,900 m) but most common below 4,600 ft. Nest in rock recesses, logs, tree hollows, and man-made enclosures.	**DCPP: Moderate –** Highly elusive and wide-ranging species that is not tracked by CDFW. Suitable habitat along Diablo Creek and adjacent uplands.
				PBR: Low – Marginal habitat along Pismo Creek and adjacent uplands.
				SMVR-SB: Unlikely – No suitable habitat.
				SMVR-SM: Unlikely – No suitable habitat.
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**DCPP: Moderate –**Suitable roosting habitat in structures at site. Nearest recent record (2017) located near Johnson Ranch Open Space approximately 10 miles east of site.
				PBR: High – Suitable roosting and foraging habitat present. Nearest record (1992) located in developed area of PBR Beach approximately 2 miles northwest of site.
				SMVR-SB: Low – Potential roosting and foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
				SMVR-SM: Low – Potential roosting and foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Dipodomys heermanni morroensis	Morro Bay kangaroo rat	FE, SE, FP	Coastal sage scrub on the south side of Morro Bay. Needs sandy soil, but not active dunes, prefers early seral stages.	**DCPP: Unlikely –**No suitable habitat present. Nearest record (1983) located in Montana de Oro State Park approximately 5 miles north of site; however, this represents the southern extent of this highly localized species' range.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				PBR: Unlikely– No suitable habitat present. Proposed Project site is located outside of the geographical range of the species. Nearest record (1983) located in Montana de Oro State Park approximately 17 miles northwest of site.
				SMVR-SB: Unlikely– No suitable habitat present. Proposed Project site is located outside of the geographical range of the species. No records within the vicinity of the Proposed Project site.
				SMVRS-SM: Unlikely– No suitable habitat present. Proposed Project site is located outside of the geographical range of the species. No records within the vicinity of the Proposed Project site.
Dipodomys ingens	Giant kangaroo rat	FE, SE		**DCPP: Unlikely –** Site is outside of the known range for the species. Nearest recent record (2019) located along the foothills adjacent to Carrizo Plain National Monument approximately 50 miles east of site.
				PBR: Unlikely – Site is outside of the known range for the species. Nearest records located within Carrizo Plain National Monument approximately 50 miles east of site.
				SMVR-SB: Unlikely – No suitable habitat present and outside of known range.
				SMVR-SM: Unlikely – No suitable habitat present and outside of known range.
Eumops perotis californicus	Western mastiff bat	SSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in	**DCPP: Moderate –** Suitable roosting habitat in structures at site. Nearest record (1991) located in eastern San Luis Obispo approximately 13 miles northeast of site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
			crevices in cliff faces, high buildings, trees, tunnels.	**PBR: Low –** Marginal roosting habitat present. Nearest record (1991) located in eastern San Luis Obispo approximately 9.5 miles north of site.
				SMVR-SB: Low – Potential roosting and foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
				SMVR-SM: Low – Potential roosting and foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Lasiurus blossevillii	Western red bat	SSC	Roosts in habitat bordering forests, rivers, cultivated fields, and urban areas. Prefers streamside habitats dominated by cottonwoods, oaks, sycamores, and walnuts.	**DCPP: Unlikely –** Marginal roosting habitat present. Nearest record (1998) located along Salinas River approximately 27 miles east of site.
				PBR: Unlikely – Marginal roosting habitat present. Nearest record (1998) located along Salina River approximately 17 miles northeast of site.
				SMVR-SB: Unlikely – No known records within vicinity of site.
				SMVR-SM: Unlikely – No known records within vicinity of site.
Lasiurus cinereus	Hoary bat	SA	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**DCPP: Unlikely –** Marginal roosting and foraging habitat present. Nearest record (1998) located at Vandenberg Air Force Base approximately 32 miles south of site.
				PBR: Unlikely – No suitable roosting or foraging habitat present. Nearest record (1998) located at Vandenberg Air Force Base approximately 25 miles south of site.
				SMVR-SB: Low – Potential roosting and foraging habitat present. No recent record located within the vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
				SMVR-SM: Low – Potential foraging habitat present. No recent record located within the vicinity of the Proposed Project site.
Neotoma lepida intermedia	San Diego desert woodrat	SSC	Coastal scrub from San Diego to San Luis Obispo Counties. Requires moderate to dense canopies preferred as well as like rocky cliffs and outcrops.	**DCPP: Present –** Suitable habitat and several middens observed at site during 2020 surveys (PG&E, 2020).
				PBR: Present – Suitable habitat and several middens observed at site during 2020 surveys (PG&E, 2020).
				SMVR-SB: Unlikely– No suitable habitat present. No recent records within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely– No suitable habitat present. No recent records within the vicinity of the Proposed Project site.
Nyctinomops macrotis	Big free-tailed bat	SSC	Prefers roosting sites associated with high cliffs or rocky outcrops but will use buildings or suitable trees. Feeds principally on large moths.	**DCPP: Moderate –** Suitable roosting habitat present in structures at site. Nearest record (1981) located along southern end of Morro Bay approximately 7 miles north of site.
				PBR: Unlikely– Marginal roosting habitat present in structures near site. Nearest record (1981) located along southern end of Morro Bay approximately 17 miles northwest of site.
				SMVR-SB: Unlikely– No suitable roosting habitat present. No recent records within the vicinity of the Proposed Project site.
				SMVR-SM: Unlikely– No suitable roosting habitat present. No recent records within the vicinity of the Proposed Project site.
Puma concolor	Mountain lion – Southern	SC	Uses a variety of habitat within range; prefer expansive, intact, heterogenous habitat.	**DCPP: Low –** Suitable habitat present. No recent records within vicinity of the Proposed Project site.

Table E2-2. Regional Special-Status Wildlife (Terrestrial)

Scientific Name	Common Name	Status	Habitat	Likelihood of Occurrence
	California/Central Coast ESU			**PBR: Unlikely –** No suitable habitat and site is surrounded by development.
				SMVR-SB: Unlikely – No suitable habitat and site is surrounded by development.
				SMVR-SM: Unlikely – No suitable habitat and site is surrounded by development.
Taxidea taxus	American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**DCPP: Moderate** – Suitable habitat in open spaces surrounding site. Nearest record (2008) located north of Los Osos Valley Road approximately 8 miles north of site. However, species has been observed closer to site by PG&E staff.
				PBR: Moderate – Marginal habitat present; however, species may occur during wide-ranging movement. Nearest record (2002) located along Price Canyon Road approximately 2 miles north of site.
				SMVR-SB: Unlikely– No suitable habitat present. Recent records located within 2 miles of the Proposed Project site.
				SMVR-SM: Unlikely– No suitable habitat present. No recent records within the vicinity of the Proposed Project site.
Vulpes macrotis mutica	San Joaquin kit fox	FE, ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and suitable prey base.	**DCPP: Unlikely –** Marginal habitat present. Site is outside of the known range of this species.
				PBR: Unlikely – No suitable habitat present. Site is outside of the known range of this species.
				SMVR-SB: Unlikely – No suitable habitat present. Site is outside of known range of this species.
				SMVR-SM: Unlikely – No suitable habitat present. Site is outside of known range of this species.

Sources: CDFW, 2022a; CDFW, 2022b; eBird, 2022; iNaturalist, 2022

REFERENCES

CCH (Consortium of California Herbaria). 2022. San Luis Obispo County records, Botanical specimen data provided by the participants of the Consortium of California Herbaria. Accessed January 11-13, 2022. http://ucjeps.berkeley.edu/consortium/.

CDFW (California Department of Fish and Wildlife). 2022a. California Natural Diversity Database (CNDDB). RareFind 5: Version 5.2.14. California Department of Fish and Wildlife, Sacramento, CA. Search conducted February 3, 2022.

_____. 2022b. Special Animals List. California Department of Fish and Wildlife, Sacramento, CA.

CNPS (California Native Plant Society). 2022. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Accessed January 11-13, 2022. http://www.rareplants.cnps.org.

eBird. 2022. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Accessed January 11-13, 2022. http://www.ebird.org.

iNaturalist. 2022. Online database. Accessed April 8-12, 2022. https://www.inaturalist.org.

PG&E (Pacific Gas and Electric Company). 2020a. Terrestrial Biological Resources Assessment – Diablo Canyon Decommissioning. Prepared for PG&E by Terra Verde Environmental Consulting, LLC and ERM. Rev. 0. August 18. Provided as Appendix K to the March 2021 Permit Application Package to the County of San Luis Obispo. p. 329.

_____. 2022a. Addendum to the Diablo Canyon Decommissioning Terrestrial Biological Resources Assessment, San Luis Obispo County, California. Prepared for PG&E by Terra Verde Environmental Consulting, LLC, June 16, 2022.

_____. 2022b. Site Assessment for California Tiger Salamander (Ambystoma californiense) Diablo Canyon Power Plant, San Luis Obispo County, California. Prepared for PG&E and Terra Verde Environmental Consulting, LLC by Storrer Environmental Services. August 15.

_____. 2022c. Site Assessment for California Tiger Salamander (Ambystoma californiense) Santa Maria Valley Railyard – Santa Barbara (SMVR-SB) (APN 113-210-001), Santa Barbara County, California. Prepared for PG&E and Terra Verde Environmental Consulting, LLC by Storrer Environmental Services, January 4. Provided as Enclosure 1 in response to Data Request Set #3 (PG&E Letter DCL-22-008 February 3, 2022).

_____. 2022d. Site Assessment for California Tiger Salamander (Ambystoma californiense) Santa Maria Valley Railyard – Santa Maria (SMVR-SM) (APN 117-820-016), Santa Barbara County, California. Prepared for PG&E and Terra Verde Environmental Consulting, LLC by Storrer Environmental Services, January 4. Provided as Enclosure 1 in response to Data Request Set #3 (PG&E Letter DCL-22-008 February 3, 2022).

_____. 2022e. Addendum to the California Red-legged Frog (Rana draytonii) Survey Report, Diablo Canyon Power Plant Decommissioning Project, San Luis Obispo County, California. Prepared for PG&E by Terra Verde Environmental Consulting, LLC. July 13.

Appendix E3

Special-Status Species Accounts

Appendix E3
Special-Status Species Accounts
PLANTS PRESENT OR WITH A LOW TO HIGH POTENTIAL TO OCCUR

Hoover's Bent Grass (*Agrostis hooveri*)

Status: Hoover's bent grass has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered

General Distribution: Native to California and has been documented within Santa Barbara and San Luis Obispo Counties from Solvang to Morro Bay at elevations between 200 and 2,000 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with dry sandy soils in closed-cone coniferous forests, chaparral, cismontane woodland, and valley and foothill grassland

Natural History: Hoover's bent grass is a perennial herb that blooms from April through July (CNPS, 2022).

Threats: Threats to this species include development, vegetation clearing, and non-native plants (CNPS, 2022).

Pecho manzanita (*Arctostaphylos pechoensis*)

Status: Pecho manzanita has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in the Pecho Hills area in San Luis Obispo County at elevations between 400 and 2,800 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with siliceous shale in closed-cone coniferous forest, chaparral, and coastal scrub.

Natural History: Pecho manzanita is a shrub that blooms from November through March (CNPS, 2022).

Threats: Threats to this species include urbanization.

Santa Margarita Manzanita (*Arctostaphylos pilosula*)

Status: Santa Margarita manzanita has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast (Pismo Beach Area) and in the Outer South Coast Ranges (Santa Lucia and La Panza Ranges) in San Luis Obispo County at elevations up to 1,000 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with chaparral and closed-cone coniferous forest.

Natural History: Santa Margarita manzanita is a shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to this species include development and urbanization.

Sand mesa manzanita (*Arctostaphylos rudis*)

Status: Sand mesa manzanita has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented along the Central Coast ranges in San Luis Obispo County and Santa Barbara Counties at elevations up to 1,100 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils in maritime chaparral and coastal scrub.

Natural History: Sand mesa manzanita is a perennial evergreen shrub that blooms from November through February (CNPS, 2022).

Threats: Threats to this species include agriculture, road construction, road maintenance, oil extraction, and possibly development.

Marsh sandwort (*Arenaria paludicola*)

Status: Marsh sandwort is state and federally listed as endangered and has CRPR of 1B.1.

General Distribution: Historically, it occurred in widely scattered locations along the Pacific Coast and a few inland locations including Hollywood and San Bernardino (Mason 1957; Munz 1974). The only known extant California occurrences are in San Luis Obispo County (CNPS, 2022). It occurs at elevations below 1,000 ft. elev.

Habitat and Habitat Associations: This species is generally associated with sandy openings of perennial freshwater marshes and swamps

Natural History: It is a perennial herb, arising from stolons, with narrow leaves and small white flowers. It blooms between May and August. (CNPS, 2022).

Threats: Threats to this species include habitat loss, altered hydrologic regimes, and competition with invasive weedy plants (USFWS 1997).

Ocean bluff milkvetch (*Astragalus nuttallii* var. *nuttallii*)

Status: Ocean bluff milkvetch has a CRPR of 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in coastal areas from the San Francisco Bay south to Santa Barbara County at elevations up to 400 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with coastal bluff scrub and coastal dunes.

Natural History: Ocean bluff milkvetch is a perennial herb that blooms from January through November (CNPS, 2022).

Threats: Threats to this species include foot traffic and road maintenance.

Coulter's saltbush (*Atriplex coulteri*)

Status: Coulter's saltbush is a CRPR List 1B.2 species. This species is not federally, or State listed as threatened or endangered.

General Distribution: Coulter's saltbush is described in some references as a coastal species of dunes and bluffs, distributed from northern Baja California to Santa Barbara County. It also has been reported from inland valleys in Riverside and San Bernardino counties.

Habitat and Habitat Associations: Coulter's saltbush is found along coastal dunes and alkaline flats below 1,500 ft. elev.

Natural History: Coulter's saltbush is a perennial herb that blooms from March through October (CNPS, 2022).

Threats: This species is threatened by development, and feral herbivores.

Davidson's saltbush (*Atriplex serenana* var. *davidsonii*)

Status: Davidson's saltbush has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered

General Distribution: Native to California Baja California and has been documented the coast from Santa Barbara County to Baja California, and inland to western Riverside County at elevations up to 650 ft. elev. (CNPS, 2022). Many of its historic locations have been extirpated (CNPS, 2022)

Habitat and Habitat Associations: This species is generally associated alkaline soils within coastal bluff scrub and coastal scrub.

Natural History: Davidson's saltbush is an annual herb that blooms from April through October following rains during spring, summer, or fall (CNPS, 2022).

Threats: There are no persistent threats identified for this species.

San Diego County viguiera (*Bahiopsis laciniata*)

Status: San Diego County viguiera has a CRPR of 4.3. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and Sonora, Mexica. In California it has been documented along the coast from Orange County south to San Diego and western Riverside Counties at elevations up to 2,500 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with chaparral and coastal scrub.

Natural History: San Diego County viguiera is a perennial shrub that blooms from February through June (CNPS, 2022).

Threats: Threats to this species include development and urbanization.

San Luis mariposa-lily (*Calochortus obispoensis*)

Status: San Luis mariposa-lily has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast (Pismo Beach Area) and in the Outer South Coast Ranges (Santa Lucia) in San Luis Obispo County at elevations up to 2,400 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with serpentine soils within chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.

Natural History: San Luis mariposa-lily is a perennial bulbiferous herb that blooms from May through July (CNPS, 2022).

Threats: Threats to this species include grazing, development, pipeline construction, road construction, and recreational activities. The species is also potentially threatened by vegetation/fuel management and mining (CNPS, 2022).

Cambria morning-glory (*Calystegia subacaulis* ssp. *episcopalis*)

Status: Cambria morning-glory has a CRPR of 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast and in the Coast Ranges in San Luis Obispo County at elevations up to 1,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with clay soils in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland.

Natural History: Cambria morning-glory is a perennial rhizomatous herb that blooms from March through July (Hickman, 1993).

Threats: This species is threatened by development and possibly threatened by alteration of fire regimes, feral pigs, grazing, mining, trampling, military activities, non-native plants, vehicles, and pipeline construction (CNPS, 2022).

Hardham's evening-primrose (*Camissoniopsis hardhamiae*)

Status: Hardham's evening-primrose has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has only been documented in San Luis Obispo County at elevations between 400 and 3,100 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with burned areas or disturbed areas with carbonate or sandy soils within chaparral and cismontane woodland.

Natural History: Hardham's evening-primrose is an annual herb that blooms from March through May (Hickman, 1993).

Threats: Threats to this species include road construction, grazing, mining, military activities, non-native plants, road maintenance, and vehicles (CNPS, 2022).

San Luis Obispo sedge (*Carex obispoensis*)

Status: San Luis Obispo sedge has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in coastal areas from Monterey County south to San Diego County at elevations up to 2,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with seeps in areas with clay, gabbroic, and serpentine soils within closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland

Natural History: San Luis Obispo sedge is a perennial herb that blooms from April through June (Hickman, 1993).

Threats: Threats to this species include grazing, non-native plants, military activities, and mining. Possibly threatened by recreational activities (CNPS, 2022).

San Luis Obispo owl's-clover (*Castilleja densiflora* var. *obispoensis*)

Status: San Luis Obispo owl's-clover has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast (Pismo Beach Area) and in the Outer South Coast Ranges (Santa Lucia and La Panza Ranges) in San Luis Obispo County at elevations up to 1,400 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with serpentine soils within meadows, seeps, valley and foothill grassland.

Natural History: San Luis Obispo owl's-clover is a hemiparasitic annual herb that blooms from March through May (Hickman, 1993).

Threats: Threats to this species include development and grazing (CNPS, 2022).

Lompoc ceanothus (*Ceanothus cuneatus* var. *fascicularis*)

Status: Lompoc ceanothus has a CRPR of 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in coastal areas of San Luis Obispo and Santa Barbara Counties at elevations up to 1,300 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils in chaparral.

Natural History: Lompoc ceanothus is a perennial evergreen shrub that blooms from February through April (Hickman, 1993).

Threats: This species is threatened by non-native plants (CNPS, 2022).

Nipomo Mesa ceanothus (*Ceanothus impressus* var. *nipomensis*)

Status: Nipomo Mesa ceanothus has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and is endemic to San has been documented on the Central Coast (Pismo Beach Area) in San Luis Obispo County at elevations up to 800 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils within chaparral.

Natural History: Nipomo Mesa ceanothus is a shrub that blooms from February through April (Hickman, 1993).

Threats: Threats to this species include development and non-native plants (CNPS, 2022).

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)

Status: Congdon's tarplant has a CRPR of 1B.1. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in the coastal area from Contra Costa County south to in San Luis Obispo County at elevations up to 800 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with alkaline soils within valley and foothill grassland.

Natural History: Congdon's tarplant is an annual herb that blooms from May through October (Hickman, 1993).

Threats: Threats to this species include development and possibly grazing and non-native plants(CNPS, 2022).

Chorizanthe spinosa (Mojave spineflower)

Status: Mojave spineflower has a CRPR 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Prostrate spineflower is native to California and Baja California, and has been found to occur in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura counties at elevations up to 800 meters AMSL (Hickman, 1993).

Habitat and Habitat Associations: This species is associated with chaparral, valley grassland, pinyon-juniper woodland, and coastal sage scrub habitats.

Natural History: Mojave spineflower (*Chorizanthe spinosa*) is a low growing, spreading, spiny annual herb found in shrublands throughout much of the western Mojave Desert in sometimes alkaline soils of playas on Joshua tree woodlands. Depending on rainfall, it flowers between March and July and probably does not germinate at all in dry years. California Native Plant Society considers it a species of limited distribution (List 4) and notes that it may be threatened by land use changes and vehicles.

Threats: California Native Plant Society considers it a species of limited distribution (List 4) and notes that it may be threatened by land use changes and vehicles (CNPS, 2022).

La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*)

Status: La Graciosa thistle is listed as federally endangered, and State threatened. It has CRPR of 1B.1.

General Distribution: Native to California and has been documented in the Central Coast (Santa Maria) Area) in San Luis Obispo County at elevations up to 700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with mesic, sandy soils within cismontane woodland, coastal dunes, coastal scrub, brackish marshes, and valley and foothill grassland.

Natural History: La Graciosa thistle is a perennial herb that blooms from May through August (Hickman, 1993).

Threats: Threats to this species include development, vehicles, groundwater pumping, non-native plants, and possibly grazing.

Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*)

Status: Pismo clarkia is listed as federally endangered and State rare. It has a CRPR of 1B.1.

General Distribution: Native to California and has been documented on the Central Coast (Pismo Beach Area) in San Luis Obispo County at elevations up to 600 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils within openings of chaparral, cismontane woodland, and valley and foothill grassland.

Natural History: Pismo clarkia is an annual herb that blooms from March through July (Hickman, 1993).

Threats: Threats to this species include development, road maintenance, and possibly by grazing (CNPS, 2022).

Monkey-flower savory (*Clinopodium mimuloides*)

Status: Monkey-flower savory has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in the Coast Ranges from Monterey County south to Los Angeles County at elevations between 1,000 and 5,900 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with mesic areas and streambanks within chaparral and closed-cone coniferous forest.

Natural History: Monkey-flower savory is a perennial herb that blooms from June through October (Hickman, 1993).

Threats: Threats to this species have been identified.

Paniculate tarplant (*Deinandra paniculata*)

Status: Paniculate tarplant has a CRPR of 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur on the Coast Ranges from San Luis Obispo County south to San Diego County at elevations up to 3,100 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated within vernally mesic or sandy areas of coastal scrub, vernal pools, and valley and foothill grassland.

Natural History: Paniculate tarplant is an annual herb that blooms from April through November (Hickman, 1993).

Threats: Threats to this species include development and possibly road widening (CNPS, 2022).

Umbrella larkspur (*Delphinium umbraculorum*)

Status: Umbrella larkspur has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented within the Central Coast (Pismo Beach Area) and in the Outer South Coast Ranges (Santa Lucia and La Panza Ranges) in San Luis Obispo County at elevations up to 1,000 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with chaparral and closed-cone coniferous forest.

Natural History: Umbrella larkspur is shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to this species include development and urbanization.

Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*)

Status: Blochman's dudleya has a CRPR of 1B.1. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in coastal areas from San Luis Obispo County south to San Diego County at elevations up to 1,500 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with rocky areas within clay or serpentine soils within coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland.

Natural History: Blochman's dudleya is a perennial herb that blooms from April through June (Hickman, 1993).

Threats: Threats to this species include development, grazing, trampling, erosion, and non-native plants.

Blochman's leafy daisy (*Erigeron blochmaniae*)

Status: Blochman's leafy daisy has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in the coastal areas of San Luis Obispo County at elevations up to 150 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated within coastal dune and coastal scrub.

Natural History: Blochman's leafy daisy is shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to this species include development, non-native plants, and vehicles.

Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)

Status: Hoover's button-celery has a CRPR of 1B.1. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in the coastal areas Alameda County south to San Luis Obispo County at elevations up to 150 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with vernal pools.

Natural History: Hoover's button-celery is an annual/perennial herb that blooms during July (Hickman, 1993).

Threats: Threats to this species include agriculture, overgrazing, and urbanization (CNPS, 2022).

Ojai fritillary (*Fritillaria ojaiensis*)

Status: Ojai fritillary has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on occur in the Coastal Ranges from Monterey County south to Ventura County at elevations between 700 and 3,300 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with rocky areas within mesic broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest.

Natural History: Ojai fritillary is shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to this species include road maintenance and recreational activities.

Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)

Status: Mesa horkelia has a CRPR of 1B.1. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur along the coast from San Luis Obispo to San Diego Counties and rarely inland to San Bernardino and Riverside Counties. at elevations up to 2,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with gravelly and sandy soils with maritime chaparral, cismontane woodland, and coastal scrub.

Natural History: Mesa horkelia is a perennial herb that blooms from February through July (Hickman, 1993).

Threats: Species is threatened by habitat conversion.

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)

Status: Perennial goldfields has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on occur in coastal arears from Del Norte County south to San Luis Obispo County at elevations up to 1,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with coastal bluff scrub, coastal dunes, and coastal scrub.

Natural History: Perennial goldfields is a perennial herb that blooms from January through November (Hickman, 1993).

Threats: Threats to this species include competition from non-native plants, recreational activities, and potentially trail construction and foot traffic (CNPS, 2022).

Lasthenia glabrata ssp. *coulteri* (Coulter's goldfields)

Status: Coulter's goldfields is a CRPR List 1B.1 species. This species is not federally, or State listed as threatened or endangered.

General Distribution: Coulter's goldfields is endemic to California, from Tehama County to Baja California, and inland to western San Bernardino and Riverside Counties.

Habitat and Habitat Associations: Coulter's goldfields occurs in salt marshes, playas, vernal pools, and coastal habitats at elevations up to approximately 3600 feet AMSL.

Natural History: Coulter's goldfields is annual herb that blooms from February through June.

Threats: This species has been threatened by urbanization, agriculture, road maintenance, and potentially threatened by foot traffic and drought.

Jones' layia (*Layia jonesii*)

Status: Jones' layia has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in coastal areas from Cambria to Pismo Beach in San Luis Obispo County at elevations up to 1,300 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with clay and serpentine soils within chaparral and valley and foothill grassland.

Natural History: Jones' layia is an annual herb that blooms from March through May (Hickman, 1993).

Threats: Threats to this species include grazing, non-native plants, military activities, feral pigs, frequent wildfires, and trampling (CNPS, 2022).

Southern curly-leaved monardella (*Monardella sinuata* ssp. *sinuata*)

Status: Southern curly-leaved monardella has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in the coastal areas of San Luis Obispo County at elevations up to 1,000 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils in openings of coastal scrub, coastal dunes, chaparral and cismontane woodland.

Natural History: Southern curly-leaved monardella is an annual herb that blooms from April through September (Hickman, 1993).

Threats: Threats to this species include development, habitat loss, habitat fragmentation, vehicles, foot traffic, and recreational activities (CNPS, 2022).

San Luis Obispo monardella (*Monardella undulata* ssp. *undulata*)

Status: San Luis Obispo monardella has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in the Satna Maria area of San Luis Obispo County at elevations up to 700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with sandy soils in coastal dunes and coastal scrub.

Natural History: San Luis Obispo monardella is a perennial herb that blooms from May through September (Hickman, 1993).

Threats: Threats to this species include coastal development, vehicles, and non-native plants (CNPS, 2022).

Woodland woollythreads (*Monolopia gracilens*)

Status: Woodland woollythreads has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in coastal areas from Contra Costa County south to San Luis Obispo County at elevations up to 4,000 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with openings on serpentine soils within broad-leafed upland forest, chaparral, cismontane woodland, North Coast coniferous forest, valley and foothill grassland.

Natural History: Woodland woollythreads is an annual herb that blooms from March through July (Hickman, 1993).

Threats: Threats to this species include development, road maintenance, road widening, and possibly logging (CNPS, 2022).

Aparejo grass (*Muhlenbergia utilis*)

Status: Aparejo grass has a CRPR of 2B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California east to Texas and has been documented on occur throughout central and southern California at elevations up to 7,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated alkaline and serpentine soils within chaparral, cismontane woodland, coastal scrub, meadows, and marshes.

Natural History: Aparejo grass is a perennial herb that blooms from March through October (CNPS, 2022).

Threats: Threats to this species include development and potentially grazing (CNPS, 2022).

Gambel's water cress (*Nasturtium gambelii*)

Status: Gambel's water cress is listed as federally endangered, and State threatened. It has a CRPR of 1B.1. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in coastal areas from San Luis Obispo County south to Orange County and inland to San Bernardino County at elevations up to 1,100 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with brackish and freshwater marshes.

Natural History: Gambel's water cress is a perennial herb that blooms from April through October (Hickman, 1993).

Threats: Threats to this species include habitat loss, erosion, and non-native plants (CNPS, 2022).

Michael's rein orchid (*Piperia michaelii*)

Status: Michael's rein orchid has a CRPR of 4.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented from Lake County south to Ventura at elevations up to 3,000 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with chaparral and closed-cone coniferous forest.

Natural History: Michael's rein orchid is shrub that blooms from December through March (Hickman, 1993).

Threats: Possibly threatened by road widening (CNPS, 2022).

Hooked popcornflower (*Plagiobothrys uncinatus*)

Status: Hooked popcornflower has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in the Central Coast in Monterey County and San Luis Obispo County at elevations up to 2,500 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with sandy soils in chaparral, cismontane woodland, and valley and foothill grassland.

Natural History: Hooked popcornflower is shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to the species have not been identified (CNPS, 2022).

Diablo Canyon blue grass (*Poa diaboli*)

Status: Diablo Canyon blue grass has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in the Montana de Oro State Park area of San Luis Obispo County and elevations between 400 and 1,300 ft. elev. (CNDDB, 2022).

Habitat and Habitat Associations: This species is generally associated with burned areas and shale closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub.

Natural History: Diablo Canyon blue is a perennial herb is shrub that blooms from March through April (Hickman, 1993).

Threats: Threats to the species have not been identified (CNPS, 2022).

Hoffman's sanicle (*Sanicula hoffmannii*)

Status: Hoffman's sanicle has a CRPR of 4.3. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented to in coastal areas from San Mateo County south to Santa Barbara County at elevations between 100 and 1,000 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with clay and serpentine soils in broad-leafed upland forest, coastal bluff scrub, chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest.

Natural History: Hoffman's sanicle is a perennial herb that blooms from March through May (Hickman, 1993).

Threats: Threats to this species include development and possibly logging (CNPS, 2022).

Adobe sanicle (*Sanicula maritima*)

Status: Adobe sanicle is listed as State rare and has a CRPR of 1B.1. This species is not federally listed as threatened or endangered.

General Distribution: Native to California and has been documented to occur in coastal areas from San Francisco County south to San Luis Obispo County at elevations between 100 and 800 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with clay and serpentine soils in chaparral, coastal prairies, meadows, and valley and foothill grassland (CNPS, 2022).

Natural History: Adobe sanicle is a perennial herb that blooms from February through May (Hickman, 1993).

Threats: Threats to this species include foot traffic, non-native plants, recreational activities, trampling, and urbanization (CNPS, 2022).

Black flowered figwort (*Scrophularia atrata*)

Status: Black flowered figwort has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast and Outer South Coast Ranges in Santa Barbara and San Luis Obispo Counties at elevations up to 1,600 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with chaparral, coastal dunes, coastal scrub, closed-cone coniferous forest, and riparian scrub habitats.

Natural History: This species is a perennial herb that blooms from March through July (Hickman, 1993).

Threats: Threats to this species include development and urbanization.

Chaparral ragwort (*Senecio aphanactis*)

Status: Chaparral ragwort has a CRPR of 2B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented in scattered locations in western California, from the San Francisco Bay area south through the coast and Central Valley, into Baja California. at elevations up to 2,600 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with alkaline or clay soils around vernal pools or playas within grassland, woodland, or coastal sage scrub. coniferous forest.

Natural History: Chaparral ragwort is shrub that blooms from January through April (Hickman, 1993).

Threats: Threats to this species include development and urbanization.

Splitting yarn lichen (*Sulcaria isidiifera*)

Status: Splitting yarn lichen has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on the Central Coast (Pismo Beach Area) and in the Outer South Coast Ranges (Santa Lucia and La Panza Ranges) in San Luis Obispo County at elevations up to 1,000 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with chaparral and closed-cone coniferous forest.

Natural History: Splitting yarn lichen is shrub that blooms from December through March (Hickman, 1993).

Threats: Threats to this species include development and urbanization.

San Bernardino Aster (*Symphyotrichum defoliatum*)

Status: San Bernardino aster has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented on occur San Luis Obispo County south to San Diego County at elevations up to 6,700 ft. elev. (CNPS, 2022).

Habitat and Habitat Associations: This species is generally associated with ditches, streams, springs within cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, marshes, and valley and foothill grassland.

Natural History: San Bernardino aster is a perennial herb that blooms from July through November (Hickman, 1993).

Threats: Threats to this species include development, flood control improvements, and various other land use changes. Most known extant occurrences are in the mountains and foothills away from the extensively developed parts of southern California.

Saline clover (*Trifolium hydrophilum*)

Status: Saline clover manzanita has a CRPR of 1B.2. This species is not federally, or State listed as threatened or endangered.

General Distribution: Native to California and has been documented from Sonoma County south to San Luis Obispo County at elevations up to 1,000 ft. elev. (Hickman, 1993).

Habitat and Habitat Associations: This species is generally associated with vernal pools, marshes, mesic areas of valley and foothill grassland with alkaline soils.

Natural History: Saline clover is an annual herb that blooms from April through June (Hickman, 1993).

Threats: Threats to this species include development, trampling, road construction, and vehicles.

Invertebrates

Crotch bumble bee (*Bombus crotchii*)

Status: The Crotch's bumblebee is considered a State candidate species. It is not listed as federally threatened, or endangered.

General Distribution: This species occurs primarily in California, mostly concentrated in the Central Valley, but found along the Pacific Coast and adjacent ranges and into the deserts.

Habitat and Habitat Associations: Crotch's bumblebee is associated with grass and shrublands that are hotter and dryer than habitats typically occupied by other bumblebee species.

Natural History: Crotch's bumble bee is known to be a short-tongued species and prefers plants including milkweeds, lupines, phacelias, sages, poppies, and buckwheats. This species frequently nest underground in abandoned rodent nests but can also be found above ground utilizing tufts of grass, old bird nests, rock piles, and cavities in dead trees. Workers are active April through August, whereas the queen is active from March till May.

Threats: Threats to this species include habitat loss and degradation, climate change, pesticide use, and competition from non-native bees.

Monarch butterfly (*Danaus plexippus*)

Status: The monarch butterfly is a federal Candidate for listing under the ESA and is CDFW Special Animal. This taxon is not State listed as threatened or endangered.

General Distribution: Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.

Habitat and Habitat Associations: The monarch butterfly requires roosting habitat located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby

Natural History: The larval host plant is milkweed (*Asclepias* spp.). In the western U.S., the widely distributed narrow-leaved milkweed (*A. fascicularis*) and showy milkweed (A. speciosa) are commonly used. Spring and summer breeding areas are found throughout most of California (except for the northwest) where milkweed and nectar plants are available. In southern California, breeding is generally in more coastal locations, but records exist in all non-desert areas.

The monarch butterfly is notable for its long-distance multi-generational annual migrations. Most of the western U.S. population migrates to California to winter within a coastal strip from Los Angeles to Monterey. Overwintering sites are generally located within a mile of the coast and typically consist of groves of trees of mixed height and diameter, including non-native eucalyptus, with an understory of shrubs and young trees. These sites are used as communal roosts and may host tens, hundreds, or thousands of butterflies. Monarchs generally begin arriving at overwintering sites in California in mid-October, although some may arrive as early as September. In February and March, monarchs breed at the roost site before dispersing to suitable habitat to lay their eggs.

The adult monarch feeds on flower nectar and winter-blooming food plants must be available near the winter roost. Also, the monarch requires specific microclimatic conditions in the winter roost and is particularly sensitive to any disturbance or modification to overwintering sites, including trimming or removal of trees.

Monarch populations have undergone a severe decline in recent decades due to loss of milkweed breeding habitat, loss of overwintering habitat, and use of insecticides. Overwintering sites in California are protected, to a certain extent, by State and local laws (IELP, 2012). The United States, Canada, and

Mexico have joined together to create the North American Monarch Conservation Plan (CEC, 2008), a long-term cooperative strategy to conserve the monarch butterfly and its unique migratory phenomenon.

Threats: Threats to this species include development and urbanization.

Morro shoulderband (*Helminthoglypta walkeriana*)

Status: The Morro shoulderband is listed as threatened under the ESA and is CDFW Special Animal. This taxon is not State listed as threatened or endangered.

General Distribution: Endemic to San Luis Obispo County in the central coastal region of California. It only occurs on Baywood fine sands soil type within an estimated 6,520 acres (2,638 hectares) located in and around the community of Los Osos and the City of Morro Bay (USFWS, 2022).

Habitat and Habitat Associations: Its primary habitat consists of coastal dunes, coastal scrub, and maritime chaparral within Baywood fine sands soil type with 10% slopes with dense layers of leaf litter. They also occur suburban landscaped habitats, fields, and often in high concentrations within non-native plants, such as veldt grass (*Ehrharta calycina*) and ice plant (*Carpobrotus edulis*) (USFWS, 2022).

Natural History: The Morro shoulderband spends most of the year aestivating and is generally only active during the rainy season, which in coastal San Luis Obispo County is between October and April. After the first rains of the rainy season, they emerge to find food and reproduce (USFWS, 2022). They are most active in the early evening, night, and early morning when the humidity levels are at the highest. Selection of aestivation locations is opportunistic and vary from native and non-native plants, dense areas of leaf litter and grass, and lower outer branches of shrubs. Helminthoglypta species can survive aestivation up to 170 days and lose as much as 40 percent of their body weight Morro shoulderband snails typically eat dead plant material and the fungus associated with detritus. Reproduction occurs during the rainy season when moisture conditions are suitable for feeding activity. Eggs are deposited in shallow holes in the soil below the leaf litter and hatch approximately 6 months later (USFWS, 2022).

Threats: The Morro shoulderband is threatened by habitat destruction resulting from development and habitat degradation from non-native plant species.

Fish

Tidewater goby (*Eucyclogobius newberryi*)

Status: The tidewater goby is a federally endangered species and is designated as a species of special concern by CDFW.

General Distribution: The tidewater goby is endemic to California, ranging from northern Del Norte County south to San Diego County.

Habitat and Habitat Associations: The habitat requirements for this species are coastal lagoons, and the uppermost brackish zone of larger estuaries in water that is generally less than 1 meter deep. Tidewater goby's are rarely found in marine or freshwater habitats (USFWS, 2005).

Natural History: The tidewater goby is a small fish that is grey-brown, and rarely exceeds 2 inches in length. It has large pectoral fins, and two dorsal fins. The males are nearly transparent and generally remain near their burrows, whereas the females develop darker colors. These fish are found in water with approximately 1/3 the salinity of the ocean, but occasionally migrate upstream into freshwater.

Male gobies dig burrows in clean coarse sand in April or May. Females spar with each other for access to males with burrow to lay their eggs. Female can lay up to 500 eggs per clutch and have up to 12 clutches per year. The males tend to the eggs in their burrows for 9-11 days until they hatch. Most tidewater gobies live for one year, and reproduction can occur at various times through the year. Reproduction will occur when water temperatures are between 9 and 25 degrees Celsius, and the salinity is between 2 and 27 parts per thousand (USFWS, 2005).

Threats: Threats identified for tidewater gobies include the destruction or modification of habitat from coastal development, channelization, water diversions, and groundwater over drafting. Other threats may include discharge from agriculture, increased sedimentation, summer breaching of lagoons, and vehicular activity near lagoons.

Southern Steelhead -Central California Coast DPS (*Oncorhynchus mykiss*)

Status: The Central California Coast Distinct Population Segment (DPS) was listed by the NMFS as federally threatened on August 18, 1997 (62 FR 43937). The most recent critical habitat was designated in September 2005.

General Distribution: The central California coast DPS occurs in from the Russian River (Sonoma and Mendocino counties) to Aptos Creek (Santa Cruz County), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough (commonly referred to as Red Top Creek), excluding the Sacramento-San Joaquin River Basin, as well as two artificial propagation programs: the Don Clausen Fish Hatchery, and Kingfisher Flat Hatchery/Scott Creek (Monterey Bay Salmon and Trout Project) steelhead hatchery programs (NMFS, 2006).

Habitat and Habitat Associations: The habitat requirements for steelhead in freshwater streams are often dictated by life history stages (Bjornn and Reiser, 1991). During adult and juvenile migrations, adequate discharge amounts, water temperatures, and water chemistry become important habitat variables. Fluctuations of these variables can result in a delay or complete halt in the upstream migration of adults towards spawning grounds and downstream migration of juveniles towards brackish and saltwater habitats. Suitable spawning habitat requires efficient water depths and flow velocities as primary elements; however, water temperature and turbidity are also important factors. Juvenile steelhead require living space (different combinations of water depth and velocity), shelter from predators and harsh environmental conditions, food resources, and suitable water quality and quantity for growth and survival during the summer and winter months (NMFS, 2002).

Natural History: Southern steelhead and rainbow trout represent two life history patterns of the same species. The former represents anadromy and the latter represents freshwater residency. It is common to find populations exhibiting both life history strategies within the same river system. Fish that exhibit one life history strategy can produce offspring that exhibit the other strategy.

Southern steelhead are lightly to heavily spotted with small black spots on a lighter background; the dorsal, caudal, and adipose fins have these spots as well. Juvenile and larger freshwater resident fish have a red to pink stripe down the mid-sides, hence the name for the freshwater populations. The sea run fish are larger, lack the pink stripe, and present an overall silvery appearance with a "steely" blue-grey color dorsally. The inside of the mouth is entirely white in contrast to the other Pacific salmonid species, and they have a stronger tail stock and smaller anal fin than the other native Pacific salmon. The adipose fin separates them from all other native freshwater fish in anadromous streams in coastal southern California (Moyle, 2002).

In streams, steelhead prefer habitat consisting of relatively cool, well-oxygenated water with adequate depth and cover. Temperature tolerances and preferences of steelhead vary among life stages. Eggs tend to experience mortality at temperatures more than 55° F (13.3° C) (McEwan and Jackson, 1996). At temperatures greater than 70° F (21.1° C), steelhead appear to have difficulty obtaining sufficient oxygen from the water (McEwan and Jackson, 1996).

Threats: The extensive decline of steelhead in southern California is due primarily to instream water management facilities that have resulted in inadequate flow, flow fluctuation, water diversion and extraction, blockage of migratory passageways, and desiccation of portions of rivers and streams (NMFS, 1997).

California Tiger Salamander (*Ambystoma californiense*)

Status: The California tiger salamander (*Ambystoma californiense*) is state listed as threatened. The Santa Barbara County Distinct Population Segment (DPS) of the California tiger salamander was federally listed as endangered throughout its entire range in 2000 under the federal ESA.

General Distribution: The DPS is endemic to the northern portion of Santa Barbara County, California, and currently consists of six distinct metapopulations.

Habitat and Habitat Associations: California tiger salamander require vernal pools, ponds (natural or human-made), or semi-permanent calm waters where ponded water is present for a minimum 3 to 4 months for egg development and larval maturation. Adjacent upland areas that contain small mammal burrows or other suitable dry season refuge are essential habitat requirements.

Natural History: Adult California tiger salamander spend most of their lives underground in small mammal burrows, such as those of ground squirrel and pocket gopher. Adults emerge from underground retreats to feed, court, and breed with the onset of seasonal fall and winter rains, when the ground becomes saturated and pools fill. Breeding typically occurs from November through March in the Santa Barbara region, with juveniles dispersing from ponds as they dry in May and June. Eggs hatch in about 10 to 14 days, and the larvae continue to develop in the pools for several weeks until they metamorphose. A minimum of 10 weeks is required for egg development and larval maturation. As the seasonal pools dry,

juvenile salamanders seek refuge in surrounding upland habitat, typically in small mammal burrows as described above.

Several studies have recorded migration and dispersal distances from breeding ponds (e.g. Trenham, 2001; Loredo et. Al, 1996; Orloff, 2011). Although none of these studies were conducted in Santa Barbara County, they are considered the best available sources of information on dispersal distance and potential for occurrence in surrounding upland habitats. Maximum dispersal distances of 1.2 miles and 1.4 miles (Orloff, 2011) are most often cited in the literature. The analysis in this EIR considers maximum dispersal distance from breeding ponds to be 1.4 miles based on the Orloff (2011) study and input from a local expert.

Factors including terrain and vegetation type may affect dispersal capability, but it is difficult to precisely determine the degree to which this may occur in a specific context. Man-made features such as roadways, highways, commercial or residential development, and irrigated cropland may inhibit, but not preclude dispersal. Major highways, rivers, or mountain ranges may be considered complete barriers to California tiger salamander migration.

Various studies have gathered data on the use of upland habitats by CTS. This information is essential to determining the potential for impacts to habitat and mortality (i.e., incidental take) due to proposed land use conversions. Range of dispersal from breeding ponds is an important factor in assessing potential for incidental mortality, while patterns of upland habitat use (e.g., concentration of adult California tiger salamander relative to distance from breeding ponds) is most applicable to conservation planning.

The density of CTS occupying upland refugia decreases exponentially with distance from breeding ponds (Searcy and Shaffer 2007). One study showed that approximately 95 percent of migrating CTS remained within 2,034 feet of a breeding pond. More recent studies have suggested that a higher percentage (i.e., >5 percent) might be migrating beyond this distance (Orloff 2011, Searcy and Schaffer 2013).

Threats: The main threat to the species is fragmentation and destruction of habitat by agricultural and urban development.

Lesser slender salamander (*Batrachoseps minor*)

Status: The lesser slender salamander is a California Species of Special Concern. It is not listed federally, or State listed as threatened or endangered**.**

General Distribution: Endemic to a small portion of the southern Santa Lucia Mountains of San Luis Obispo County.

Habitat and Habitat Associations: Inhabits moist locations in forests of mixed oak, tanbark oak, sycamore and laurel above 1,300 ft. elev.

Natural History: The lesser slender salamander is active on rainy or wet nights when temperatures are moderate from the fall into the spring. During the summer months when the soil dries, they go underground or when air temperature drops to near freezing. They commonly **f**ound under rocks, logs, bark, and other debris. They feed on a variety of small invertebrates. Other female Slender Salamanders lay eggs in moist places underground. Young develop completely in the egg and hatch fully formed.

Threats: Threats to the species includes habitat alteration from flash floods, mining, water diversion, and vegetation damage by cattle.

California Red-Legged Frog (*Rana draytonii*)

Status: The California red-legged frog was federally listed as an endangered species by the USFWS on May 23, 1996 and is a California Species of Special Concern. This frog has been extirpated from approximately 70 percent of its historic range. At the time of listing, the red-legged frog (*Rana aurora*) was comprised of two subspecies, the California red-legged frog (*R. aurora draytonii*) and the northern red-legged frog (*R. aurora aurora*) until genetic studies (Shaffer et al., 2004) determined that *R. aurora* is two separate species, northern red-legged frog (*R. aurora*) and California red-legged frog (*R. draytonii*). The ranges of these two species overlap in Mendocino County. Only the California red-legged frog occurs within the project region.

General Distribution: California red-legged frog was formally known as a common native frog in parts of Los Angeles, San Bernardino, Orange, Riverside, and San Diego Counties (Jennings et al., 1992). Numerous records of California red-legged frogs exist from the 1930s along the Mojave River near Victorville (San Bernardino County), as well as along the San Luis Rey River in San Diego County. Red-legged frogs were found in the southern transverse and peninsular ranges. Known historic watersheds include: Calleguas, Santa Monica Bay, Los Angeles, San Gabriel, Antelope-Fremont Valleys (partial), Santa Ana, San Jacinto, Seal Beach, Newport Bay, Aliso-San Onofre, Santa Margarita, San Luis Rey, San Diego, Cottonwood-Tijuana, Whitewater River, San Felipe Creek, and Salton Sea (partial). Red-legged frogs were found in the Mojave River, San Gabriel River, and Santa Clara River. There are historic locations in Los Angeles, Riverside, Santa Barbara, and Ventura Counties in southern California.

Habitat Requirements This species is found in humid forests, woodlands, grasslands, streams, wetlands, ponds, and lakes from sea level to 8,000 ft (2,438 m) above mean sea level (msl) (Stebbins, 2003). Preferred breeding habitat includes deep ponds and slow-moving streams where emergent vegetation is found on the bank edges (Jennings and Hayes, 1994). Although primarily aquatic, it has been recorded in damp terrestrial places up to 302 ft (92 m) from water for up to 50 consecutive days (Tatarian, 2008) and using small mammal burrows and moist leaf litter as refugia during dry periods (Jennings and Hayes, 1994).

Natural History: The California red-legged frog ranges in size from 1.5 to 5.5 inches in length, making it the largest native frog in the western United States. Adult females are significantly longer than males, with an average snout to vent length (svl) of 5.4 inches versus 4.5 inches for adult males. The hind legs and lower abdomen of adult frogs are often characterized by a reddish or salmon pink color, and the back is brown, gray, olive, or reddish brown, marked with small black flecks and larger irregular dark blotches (Stebbins, 2003). Dorsal spots often have light centers, and in some individuals, form a network of black lines (Stebbins, 2003). Dorsolateral folds are prominent. Tadpoles range in length from 14 to 80 mm, and are a dark brown or olive, marked with darker spots (Storer, 1925).

California red-legged frog adults tend to be primarily nocturnal, while juveniles can be active at any time of day. Adults feed on a wide range of prey, having been recorded feeding on at least 42 different taxa in a single study (Hayes and Tennant, 1985), the majority of which were terrestrial invertebrates but also included fish, other amphibians, and small rodents. The diet of red-legged tadpoles has not been studied but is expected to be like other ranid frogs that feed on algae, diatoms, and detritus by grazing the surface of rocks and vegetation.

During the breeding season, typically from November through April, males call to females from the margins of ponds and slow streams (Jennings and Hayes, 1994). Unlike northern red-legged frogs, which lack vocal sacs and call underwater, California red-legged frogs have paired vocal sacs and call above the water surface (Hayes and Krempels, 1986), though vocalizations are relatively weak and difficult to detect. Actual mating most commonly occurs in March but can vary depending on seasonal climatic patterns. The female lays a jellylike mass of 2,000 to 5,000 reddish brown eggs attached to emergent vegetation, twigs, or other structures in still or slow-moving water. The resulting tadpoles typically require about 3 weeks to hatch, and another 11 to 20 weeks to metamorphose into juvenile frogs. Metamorphosis typically occurs from July to September, although some tadpoles have been observed to delay metamorphosis until the following March or April (Fellers et al., 2001). Male red-legged frogs typically reach sexual maturity 2 years from metamorphosis whereas females reach sexual maturity 3 years from metamorphosis (Jennings and Hayes, 1985).

Threats: California red-legged frogs are probably subject to predation by aquatic invertebrates and vertebrates such as fishes, other amphibians, snakes, and occasionally birds and mammals, during all life history stages (Zeiner et al., 1988). Introduced species that prey upon California red-legged frogs, eggs, and larvae include crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs (*Lithobates* [*Rana*] *catesbeiana*), green sunfish (*Lepomys cyanellus*), bluegill (*L. macrochirus*), largemouth bass (*Micropterus salmoides*) and smallmouth bass (*M. dolomieu*). This frog has been eliminated from 75 percent of its historic range. Species decline is attributed to habitat loss, introduction of non-native species (predators and competitors), natural predation, and historically, use of frog legs as a food source. Threats to California red-legged frogs on NFS lands include predatory invasive species, crushing due to activities on roads and in campgrounds, disturbance from water play, disease, water diversions, and grazing.

Western spadefoot (*Spea hammondii*)

Status: The western spadefoot toad is a CDFW Species of Special Concern. This species is not federally, or State listed as threatened or endangered.

General Distribution: The western spadefoot toad is endemic to California and northern Baja California. The species ranges from the north end of California's great Central Valley near Redding, south, east of the Sierras and the deserts, into northwest Baja California (Jennings and Hayes, 1994; Stebbins, 2003).

Habitat and Habitat Associations: Although the species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, the western spadefoot toad occurs from sea level to 1,219 meters (4,000 feet) AMSL, but mostly at elevations below 910 meters (3,000 feet) AMSL (Stebbins, 2003;). Holland and Goodman (1998) report that riparian habitats with suitable water resources may also be used. The species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman, 1998).

Natural History: The western spadefoot toad is almost completely terrestrial, remaining underground eight to 10 months of the year and entering water only to breed (Jennings and Hayes, 1994; Holland and Goodman, 1998). The species aestivates in upland habitats near potential breeding sites in burrows approximately one meter in depth and adults emerge from underground burrows during relatively warm rainfall events to breed. While adults typically emerge from burrows from January through March, they

may also emerge in any month between October and April if rain thresholds are met (Jennings and Hayes, 1994; Holland and Goodman, 1998).

Eggs are deposited in irregular small clusters attached to vegetation or debris in shallow temporary pools or sometimes ephemeral stream courses (Stebbins, 1985; Jennings and Hayes, 1994) and are usually hatched within six days. Complete metamorphosis can occur rapidly, within as little as three weeks (Holland and Goodman, 1998; as cited in USACE and CDFW, 2009), but may last up to 11 weeks (Burgess, 1950; Feaver, 1971; Jennings and Hayes, 1994; all as cited in USACE and CDFW, 2009).

Western spadefoot toads likely do not move far from their breeding pool during the year (Zeiner *et al.*, 1988; as cited in USACE and CDFW, 2009), and it is likely that their entire post-metamorphic home range is situated around a few pools. However, opportunistic field observations indicate that they readily move up to at least several hundred meters from breeding sites (NatureServe, 2022).

Threats: Loss of aquatic and adjacent upland habitats supporting the life cycle of the western spadefoot toad is a primary threat to this species, but other factors related to urban development probably are contributing to this species' decline.

Coast Range newt (*Taricha torosa torosa*)

Status: The Coast Range newt is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The Coast Range newt occurs along the coast ranges of California, from Mendocino County south to Los Angeles County and disjunct south to the Cuyumaca Mountains in San Diego County (NatureServe, 2022). This subspecies has also been recorded along the southern Sierra Nevada from Tulare County to Kern County (Kuchta and Tan, 2006).

Habitat and Habitat Associations: This subspecies breeds in ponds, reservoirs, and streams. Terrestrial adults occupy various adjacent upland habitats, including grasslands, woodlands, and forests (NatureServe, 2022).

Natural History: The Coast Range newt belongs to the genus *Taricha*, whose members are readily distinguishable from all other western salamanders by a distinctive tooth pattern, lack of costal grooves, and rough skin (except in breeding males) (Stebbins, 2003). Migration towards suitable breeding grounds usually occurs at night following the first rains in the fall. Upon arriving at breeding sites, adults become aquatic and may remain at these sites for several weeks. Breeding typically occurs between December and May with optimal peaks between February and April (NatureServe, 2022). Adults migrate back to subterranean refuges during the spring and remain at these aestivation sites through the summer. Larvae normally transform in the summer or fall, or when water dries up, of their first year. Metamorphosed individuals feed on earthworms, snails, slugs, sow bugs, and various other invertebrates. Some adults, especially females may consume conspecific eggs. Larvae eat small aquatic organisms and decomposing organic material (Stebbins, 1951).

Threats: This subspecies has suffered marked population declines likely due to the introduction of exotic predators, including green sunfish (*Lepomis cyanellus*), mosquito fish, and crayfish (*Procambarus* sp.) (Stebbins, 2003).

REPTILES

Northern California legless lizard (*Anniella pulchra*)

Status: The silvery legless lizard is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: Silvery legless lizard occurs from Contra Costa County, California, south through the Coast, Transverse, and Peninsular Ranges; through parts of the San Joaquin Valley; and, along the western edge of the southern Sierra Nevada and western edge of the Mohave Desert (Jennings and Hayes, 1994). Its reported elevation range extends from sea level to approximately 5,700 feet in the Sierra Nevada foothills, but most historic localities along the central and southern California coast are below 3,500 feet (Jennings and Hayes, 1994). This fossorial species is rarely seen, and it may be more abundant than it appears.

Habitat and Habitat Associations: The silvery legless lizard requires sandy or loose loamy soils under sparse vegetation for burrowing and is strongly associated with soils that contain high moisture content. It has been found in beaches, chaparral, and pine-oak woodland habitat and sycamore, cottonwood, or oak riparian habitat that grows on stream terraces. It is most common in coastal dune, valley-foothill, chaparral, and coastal scrub habitats (Zeiner *et al.*, 1988).

Natural History: The silvery legless lizard is a member of the family Anniellidae, commonly known as North American legless lizards. The silvery, gray, or beige dorsal side of this subspecies is separate from the yellow ventral side by a dark mid-dorsal line (Stebbins, 2003). Little is known about specific habitat requirements for courtship and breeding (CDFW, 2008). Breeding occurs in early spring through July. The gestation period lasts for approximately four months (Jennings and Hayes, 1994). Live young are born in September, October, or occasionally as late as November, with litter size ranging from one to four, but two is most common (Stebbins, 1954). Soil moisture is essential for the subspecies, and they die if they are unable to reach a moist substrate (Stephenson and Calcarone, 1999). Silvery legless lizards have a relatively low thermal preference, allowing for active behavior on cool days, early morning, and even at night during warmer periods (Bury and Balgooyen, 1976). This subspecies typically forages at the base of shrubs or other vegetation either on the surface or just below in leaf litter or sandy soils. The diet consists of insect larvae, small adult insects, and spiders (Stebbins, 1954).

Threats: The subspecies has been extirpated from approximately 20 percent of its known historical range. Potential threats to local populations may include wildfires that destroy the desert shrub with which the subspecies is associated.

Western pond turtle (*Emys marmorata*)

Status: The southwestern pond turtle is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: This species occurs from range extends from the Puget Sound region of Washington State south to Baja California.

Habitat and Habitat Associations: Western Pond turtles inhabit permanent or nearly permanent bodies of water in a wide variety of habitat types. Suitable basking sites, such as partially submerged logs, vegetation mats, or open mud banks are a required element for this subspecies.

Natural History: The western pond turtle is a subspecies of western pond turtle (*C. marmorata*) which represent the only abundant native turtles in California. This species is thoroughly aquatic and possesses a low carapace typically olive, brown, or blackish in color (Stebbins, 2003). The subspecies usually lays a clutch of 3 to 14 eggs between April and August as females may move overland up to over 300 feet to find suitable nesting sites. Nests have been observed in many soil types from sandy to very hard and soils must be at least four inches deep for nesting (CDFW, 2008). Most activity is diurnal, but some crepuscular and nocturnal behavior has been observed (CDFW, 2008). Southwestern pond turtles feed on aquatic plants, insects, worms, fish, amphibian eggs and larvae, crayfish, and carrion (Stebbins, 2003).

Threats: Western pond turtles are estimated to be in decline across 75-80 percent of their range (Stebbins, 2003). The primary reason for this decline has been attributed to loss of suitable habitat associated with urbanization, agricultural activities, and flood control and water diversion projects (Jennings *et al.*, 1992).

Coast horned lizard (*Phrynosoma blainvillii*)

Status: The coast horned lizard is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The coast horned lizard's historic range extended from the Transverse Ranges in Kern, Los Angeles, Santa Barbara, and Ventura Counties south through the Peninsular Ranges of southern California and into Baja California, Mexico as far south as San Vicente, however, the current range is much more fragmented (Jennings and Hayes, 1994).

Habitat and Habitat Associations: The coast horned lizard occurs in a wide variety of habitats throughout its range, though is found primarily in chaparral and mixed chaparral-coastal sage scrub, to stands of pure coastal sage scrub. It is also known to occur in riparian habitats, washes, and most desert habitats. They are occasionally locally abundant in conifer-hardwood and conifer forests. This species is most common in open, sandy areas where abundant populations of native ant species (e.g., *Pogonomyrmex* and *Messer* spp.) are present.

Natural History: The coast horned lizard is a flat bodied lizard with a wide, oval-shaped body and scattered enlarged pointed scales on the upper body and tail. Coast horned lizards are oviparous and lay one clutch of 6-17 (average 11-12) eggs per year from May through early July (Jennings and Hayes, 1994). Incubation occurs for two months, and hatchlings first appear in late July and early August. It is surface active primarily from April to July. This species spends a considerable amount of time basking, either with the body buried and head exposed, or with the entire body oriented to maximize exposure to the sun. Although little is known about longevity in the wild, adults are thought to live for at least eight years (Jennings and Hayes, 1994). They primarily eat native harvester ants (*Pogonmyrmex* spp.) and do not appear to eat invasive Argentine ants that have replaced native ants in much of central and southern California. This species is an opportunistic feeder, and while harvester ants can comprise upwards of 90% of their diet, they will feed on

other insect species when those species are abundant (Jennings and Hayes, 1994). Defense tactics used by this species include remaining motionless to utilize its cryptic appearance, only running for the nearest cover when disturbed or touched. Captured lizards puff up with air to appear larger, and if roughly handled, will squirt blood from a sinus in each eyelid (Jennings and Hayes, 1994).

Threats: Though once common throughout much of coastal and cismontane southern California, coast horned lizards have disappeared from much of their former range. Their population decline is mainly attributed to habitat loss due to urbanization and agricultural conversion. The introduction of non-native Argentine ants (*Iridomyrmex humilis*), which are inedible to horned lizards and tend to displace native carpenter and harvester ants, is another factor in their decline.

Two-striped garter snake (*Thamnophis hammondii*)

Status: The two-striped garter snake is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: This species occurs along a continuous range from northern Monterey County south through the South Coast and Peninsular Ranges to Baja California. Isolated populations also occur through southern Baja California, Catalina Island, and desert regions along the Mojave and Whitewater Rivers in San Bernardino and Riverside Counties, respectively (Jennings and Hayes, 1994). This species typically occurs at elevations ranging between sea level and approximately 8,000 feet (Jennings and Hayes, 1994).

Habitat and Habitat Associations: This species is primarily associated with aquatic habitats that border riparian vegetation and provide nearby basking sites (Jennings and Hayes, 1994). These areas typically include perennial and intermittent streams and ponds in a variety of vegetation communities, including chaparral, oak woodland, and forest habitats (Jennings and Hayes, 1994). During the winter, two-striped garter snakes will seek refuge in upland areas, such as adjacent grassland and coastal sage scrub (Rossman *et al.*, 1996).

Natural History: After several taxonomic revisions, two-striped garter snake has been recognized as a separate species where it had previously been considered a subspecies of the western aquatic garter snake (*T. couchii*) (Rossman and Stewart, 1987). This species is usually morphologically distinguished by the lack of a mid-dorsal stripe. Two-striped garter snakes breed from late March to early April and young are typically born between late July and August; however, some have been observed as late as November (Rossman *et al.*, 1996; Jennings and Hayes, 1994). Two-striped garter snakes hibernate during the winter months; however, they have been observed actively above ground on warm winter days (Jennings and Hayes, 1994). The mainly aquatic diet of this species consists primarily of fish, fish eggs, and tadpoles and metamorphs of toads and frogs; however, they will also consume worms and newt larvae (Jennings and Hayes, 1994).

Threats: The quantity and quality of habitat for two-striped garter snakes is declining throughout much of its range. More than forty percent of this species' historic range has been lost (Jennings and Hayes, 1994). Primary factors for the decline of this species in southern California include habitat conversion and degradation resulting from urbanization, construction of reservoirs, and cement-lining of stream channels.

BIRDS

Cooper's hawk (*Accipter cooperii*)

Status: The Cooper's hawk is a CDFW Watch List Species that was removed from the Species of Special Concern list in 2008. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The Cooper's hawk is widespread, occurring throughout much of the United States, southern Canada, and northern Mexico. In California this species is a widespread but infrequent breeder but is not considered common at any location.

Habitat and Habitat Associations: The Cooper's hawk breeds in small and large deciduous, conifer, and mixed woodlands. It also nests in pine plantations and suburban and urban environments (Curtis *et al.*, 2006). In California, this species nests predominately in oaks and pines. Cooper's hawks utilize a variety of habitat types with vegetative cover and often hunt on the edges of wooded areas.

Natural History: One of three accipiter species in California, the Cooper's hawk is a medium-sized bird adapted to woodlands. This species shows a high degree of sexual dimorphism, with females generally up to one-third larger than males. Eastern and western individuals also differ in size. The Cooper's hawk generally breeds at two years of age and older and lays 3-6 eggs from early April to late May (Rosenfield and Bielefeldt, 1993). This species feeds primarily on birds (70-80 percent of the diet) (Zeiner *et al.*, 1990a).

Threats: Habitat destruction (including logging and development), pesticide contamination, and shooting have been identified as the primary threats to the Cooper's hawk. However, breeding populations have increased in California and expanded into urban areas and populations are considered stable (Shuford and Gardali, 2008).

Tricolored blackbird (*Agelaius tricolor*)

Status: The tricolored blackbird is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: This species is primarily a permanent resident across its range in California and occurs throughout the Central Valley and in coastal districts from Sonoma County south to Baja California.

Habitat and Habitat Associations: The tricolored blackbird breeds near fresh water, preferably in emergent wetland with tall dense cattails (*Typha* spp.) or tules, but also in thickets of willows, blackberry, wild rose, and tall herbs (CDFW, 2022). This species forages primarily in grassland and cropland habitats.

Natural History: The tricolored blackbird is distinguishable from similar species by dark red shoulder patches with broad white tips bordering the distal side. This highly gregarious species is highly colonial and nesting areas must be large enough to support a minimum colony of roughly fifty pairs (Grinnell and Miller, 1944). Tricolored blackbirds are polygynous and during the breeding season, which typically occurs from mid-April into late July, each male may claim several mates nesting in his small territory. Foraging

generally occurs in the vicinity of colony sites; however, some breeding individuals have been documented leaving nest sites as far as four miles to feed (Orians, 1961).

Threats: Some of the threats that have been identified for this species include loss of habitat due to draining of freshwater marshes and cowbird parasitism.

Golden eagle (*Aquila chrysaetos*)

Status: The golden eagle is on Golden eagle is federally protected under the Bald and Golden Eagle Protection Act, recognized as sensitive species by the BLM, fully protected species in California, and is USFWS BCC. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: In North America, this species breeds locally from northern Alaska eastward to Labrador and southward to northern Baja California and northern Mexico. The species winters from southern Alaska and southern Canada southward through the breeding range. The golden eagle ranges from sea level up to 11,500 feet AMSL (Grinnell and Miller, 1944).

Habitat and Habitat Associations: The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner *et al.* 1990a).

Natural History: The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner *et al.* 1990a). Nest construction in southern California occurs in fall and continues through winter (Dixon. 1937). This species nests on cliffs with canyons and escarpments and in large trees (generally occurring in open habitats) and is primarily restricted to rugged, mountainous country (Garrett and Dunn, 1981; Johnsgard, 1990). It is common for the golden eagle to use alternate nest sites, and old nests are reused. The nests are large platforms composed of sticks, twigs, and greenery that are often three meters (10 feet) across and one meter (three feet) high (Zeiner *et al.* 1990a). They breed from late January through August, mainly during late winter and early spring in the California deserts (Pagel et al. 2010). Golden eagles are wide-ranging predators, especially outside of the nesting season, when they have no need to return daily to tend eggs or young at their nests. Foraging habitat consists of open terrain including grasslands, deserts, savanna, and early successional forest and shrubland habitats. They prey primarily on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002). Golden eagle home ranges in the Mojave Desert range from 1.7 to 1,369 square miles, and averaged 119 square miles (Braham et al., 2015). In any given year, golden eagles may initiate nesting behavior at one nest, without any activity at the other nests. Eagles may complete breeding by laying eggs and raising chicks or may abandon the nest without successfully raising young. In any given year, all or most nests in a territory may be inactive, but eagles may return in future years to nest at previously inactive sites.

Threats: A major threat to this species is human disturbance in the form of habitat loss as well as human development and activity adjacent to golden eagle habitat. Accidental deaths attributed to increased development include collisions with vehicles, power lines, and other structures; electrocution; hunting; and poisoning (Cornell, 2022). Golden eagles avoid developed areas; the golden eagle population in California has undergone a decline within the past century due to a decrease in open habitats (Grinnell

and Miller, 1944). If nests are disturbed by humans, abandonment of these nests in early incubation will typically occur (Thelander, 1974), thereby threatening the species' reproductive success.

Long-eared owl (*Asio otus*)

Status: The long-eared owl has been designated by CDFW as a California Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The long-eared owl (*Asio otus*) occurs in North America, Europe, Asia, and northern Africa between elevations from near sea level to over 2,000 meters (6,560 feet) AMSL (Zeiner et al., 1990a). In North America, this species breeds from British Columbia east across Canada and the United States and south to southern California, southern Arizona, and northern Mexico. It also winters in most of its breeding range, except in the northernmost areas. The long-eared owl's wintering range extends from southern Canada and northern New England to the Gulf States and to the Jalisco, Michoacan, Guerrero, and Oaxaca states in Mexico (Cornell, 2022).

Habitat and Habitat Associations: The long-eared owl primarily uses riparian habitat for roosting and nesting but can also use live oak thickets and other dense stands of trees (Zeiner et al., 1990a). It appears to be more associated with forest edge habitat than with open habitat or forest habitat. The long-eared owl usually does not hunt in the woodlands where it nests, but in open space areas such as fields, rangelands, and clearings.). This species typically utilizes nests built by other species, or on occasion nest in cavities in trees and cliffs, and even on the ground (Cornell, 2022).

Natural History: The long-eared owl eats mostly voles and other rodents, though it also occasionally eats birds and other vertebrates (Cornell, 2021). The long-eared owl uses abandoned crow, magpie, hawk, heron, and squirrel nests in a variety of trees with dense canopy (Call, 1978; Cornell, 2022). Breeding season extends from early March to late July (Call, 1978).

Threats: Resident populations of the long-eared owl in California have been declining since the 1940s, especially in southern California (Grinnell and Miller, 1944; Shuford *et al.*, 2008). Habitat destruction, including grasslands used for foraging, fragmentation of riparian nesting habitat and live oak groves, and proximity to urban development are cited as major factors in the decline of populations in California. Other urban-related factors that could affect long-eared owls are nighttime lighting, which may disrupt activity patterns and expose nests to nocturnal predators; use of pesticides, which may cause secondary poisoning and reduction or loss of prey; and predation and harassment by pet, stray, and feral cats, and dogs.

Burrowing owl (*Athene cunicularia*)

Status: The burrowing owl is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The burrowing owl (*Athene cunicularia*) breeds from southern interior British Columbia, southern Alberta, southern Saskatchewan, and southern Manitoba, south through eastern

Washington, central Oregon, and California to Baja California, east to western Minnesota, northwestern Iowa, eastern Nebraska, central Kansas, Oklahoma, eastern Texas, and Louisiana, the southern portion of Florida, and south to central Mexico. The species is also locally distributed throughout suitable habitat in Central and South America to Tierra del Fuego, and in Cuba, Hispaniola, the northern Lesser Antilles, Bahama Islands, and in the Pacific Ocean off the west coast of Mexico. The western subspecies, western burrowing owl, occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama. The winter range of the western burrowing owl is much the same as the breeding range, except that most individuals apparently vacate the northern areas of the Great Plains and the Great Basin.

Habitat and Habitat Associations: In California, western burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates, 2006). They typically inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation and also may occur in areas that include trees and shrubs if the cover is less than 30% (Bates, 2006); however, they prefer treeless grasslands. Although western burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been observed in fallow agriculture fields, golf courses, cemeteries, road allowances, airports, vacant lots in residential areas and university campuses, and fairgrounds when nest burrows are present (Bates 2006). The availability of numerous small mammal burrows, such as those of California ground squirrel (*Spermophilus beecheyi*), is a major factor in determining whether an area with apparently suitable habitat supports western burrowing owls (Coulombe, 1971).

Natural History: Most western burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north during March and April, and into the first week of May. These individuals' winter within the breeding habitat of more southern-located populations. Thus, winter observations may include both the migrant individuals as well as the resident population. Western burrowing owls occurring in Florida are predominantly non-migratory, as are populations in southern California (Thomsen, 1971). Western burrowing owls in northern California are believed to migrate (Coulombe, 1971). In many parts of the United States, the western burrowing owl's breeding range has been reduced and it has been extirpated from certain areas, including western Minnesota, eastern North Dakota, Nebraska, and Oklahoma (Bates 2006).

Western burrowing owls are opportunistic, primarily feeding on arthropods, small mammals, and birds, and often need short grass, mowed pastures, or overgrazed pastures for foraging. Western burrowing owls are primarily crepuscular in their foraging habits, but hunting has been observed throughout the day (Thomsen 1971). Insects are often taken during daylight, whereas small mammals are taken more often after dark.

Threats: Factors related to declines in western burrowing owl populations include the loss of natural habitat due to urban development and agriculture; other habitat destruction; predators, including domestic dogs; collisions with vehicles; and pesticides/poisoning of ground squirrels (Grinnell and Miller 1944). A ranking of the most important threats to the species included loss of habitat, reduced burrow availability due to rodent control, and pesticides (James and Espie 1997).

Northern harrier (*Circus hudsonius*)

Status: The northern harrier is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The northern harrier is found throughout the northern hemisphere. In North America, this species breeds from Alaska and the southern Canadian provinces south to Baja California, New Mexico, Texas, Kansas, and North Carolina (Limas, 2001).

Habitat and Habitat Associations: Northern harriers use a wide variety of open habitats in California, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes (Macwhirter and Bildstein, 1996; as cited in USACE and CDFG, 2009). The species can also forage over coastal sage scrub or other open scrub communities.

Natural History: The northern harrier's owl-like facial disk and white rump patch, which is prominent in flight, distinguish this species from all other North American falconiformes (Alsop III, 2001). Many California populations, including those in Ventura County, are residents, and many migrating harriers winter in California. The breeding season for this species typically occurs between mid-March to early April. During this period, males, and occasionally females, exhibit uniquely characteristic courtship flights consisting of a series of nose dives (Bent, 1937). The northern harrier is predominately monogamous, but polygyny occurs when prey abundance is high. Nests are built on the ground. Clutch size averages five, and incubation lasts 30-32 days with nestlings fledging at 30-35 days. Hatching occurs from April through June. This bird relies on hearing as well as sight while hunting and primarily feeds on small mammals, but will also take reptiles, amphibians, birds, and invertebrates.

Threats: The primary threat to northern harriers is habitat loss through development and agricultural conversion.

White-tailed kite (*Elanus leucurus*)

Status: The white-tailed kite is a CDFW Fully Protected Species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The white-tailed kite is a permanent resident in California, southern Texas, Washington, Oregon, and Florida. It also occurs as a resident from Mexico into parts of South America (Dunk, 1995). In California, this species inhabits coastal and valley lowlands and is typically found in agricultural areas. It has increased population numbers and range in recent decades (Zeiner *et al.*, 1990a).

Habitat and Habitat Associations: The white-tailed kite inhabits savanna, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields (Dunk, 1995). This species roosts in trees with dense canopies as well as saltgrass and Bermuda grass (Zeiner *et al.*, 1990a).

Natural History: The white-tailed kite is a medium-sized, long-winged raptor with red eyes. This monogamous species breeds from February to October, with peak activity occurring between May and August. Incubation is solely performed by the female; however, during incubation and the nestling period,

the male feeds the female and provides her with food to feed the young (CDFW, 2022). The white-tailed kite is the only North American kite that hovers while hunting, usually less than thirty meters above the ground before descending vertically upon prey (Alsop III, 2001; Zeiner *et al.*, 1990a). This species primarily feeds on voles and other small mammals but will also take birds, insects, reptiles, and amphibians. Although white-tailed kites are non-migratory, individuals may become nomadic in response to prey availability (Zeiner *et al.*, 1990a).

Threats: While the white-tailed kite is reported to have increased in numbers and range over the past several decades, it is still vulnerable to habitat loss due to development.

American peregrine falcon (*Falco peregrinus anatum*)

Status: The peregrine falcon is a federal Bird of Conservation Concern and a California Fully Protected species.

General Distribution: The peregrine falcon has a worldwide distribution that is more extensive than that of any other bird. In North America, the peregrine falcon breeds from Alaska to Labrador, southward to Baja California and other parts of northern Mexico, and east across central Arizona through Alabama. Its distribution is patchy in North America, and populations in the eastern United States are still chiefly in urban areas (AOU, 1998; White *et al.*, 2002; as cited in USACE and CDFC, 2009).

Habitat and Habitat Associations: Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes (AOU, 1998; Brown, 1999; Snyder, 1991; all as cited in USACE and CDFC, 2009). Riparian areas, as well as coastal and inland wetlands, are also important habitats year-round for this species. The species breeds mostly in woodland, forest, and coastal habitats (Zeiner et al, 1990a; Brown, 1999; all as cited in USACE and CDFC, 2009).

Natural History: In California, the American peregrine falcon is an uncommon breeder or winter migrant throughout much of the state. It is absent from desert areas (Zeiner *et al.*, 1990a; as cited in USACE and CDFC, 2009). Active nests have been documented along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. As a transient species, the American peregrine falcon may occur almost anywhere that suitable habitat is present (Garrett and Dunn, 1981; as cited in USACE and CDFC, 2009).

The diet of the American peregrine falcon primarily consists of birds that, while most are pigeon-sized, can be as small as hummingbirds or as large as small geese (White *et al.*, 2002; as cited in USACE and CDFC, 2009). Other prey species include jays, flickers, meadowlarks, starlings, woodpeckers, shorebirds, and other readily available birds. The American peregrine falcon may feed on large numbers of rodents when present (Brown, 1999; as cited in USACE and CDFC, 2009).

Breeding requires cliffs or suitable surrogates that are close to preferred foraging areas. Nests are typically located in cliffs between 50 and 200 meters (164 to 656 feet) tall that are prominent in the landscape. American peregrine falcons have also been known to nest in trees and on small outcrops. Tall buildings,

bridges, or other tall man-made structures are also suitable for nesting (White *et al.*, 2002; as cited in USACE and CDFC, 2009). The nest site usually provides a panoramic view of open country and often overlooks water. It is always associated with an abundance of avian prey, even in an urban setting. A cliff or building nest site may be used for many years (Brown, 1999; as cited in USACE and CDFC, 2009). The nest site itself usually consists of a rounded depression or scrape with accumulated debris that is occasionally lined with grass (Call, 1978; as cited in USACE and CDFC, 2009). Higher-quality nest sites confer greater protection from the elements and have greater breeding success (Olsen and Olsen, 1989; as cited in USACE and CDFC, 2009).

Threats: There are no persistent threats identified for this species.

California condor (*Gymnogyps californianus*)

Status: The California condor is listed as both state and federally endangered and is a California Fully Protected species.

General Distribution: The southern California population of the California condor is largely confined to the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County, the Transverse Ranges, Tehachapi Mountains, and southern Sierra Nevada (Zeiner et al., 1990a; as cited in USACE and CDFG, 2009). The California condor has also historically occurred in northern Baja California, Mexico; northern California; Oregon; Washington; and south British Columbia, Canada in the early nineteenth century (Harris, 1941; Koford, 1953; Wilbur, 1978; Kiff, 2000; Snyder and Snyder, 2000; all as cited in USACE and CDFG, 2009).

Habitat and Habitat Associations: California condors require vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting (Zeiner et al., 1990a; as cited in USACE and CDFG, 2009).

***Natural History*:** Prior to all California condors being removed from the wild for captive breeding in the late 1980s, nonbreeding California condors often moved north to Kern and Tulare counties in April and returned south in September to winter in the Tehachapi Mountains, Mount Pinos, and Ventura and Santa Barbara counties (Zeiner et al., 1990a; as cited in USACE and CDFG, 2009). Since that time, California condors have been reintroduced into suitable habitat in eastern Ventura County as well as in the Ventana Wilderness area along the coast south of San Francisco.

The California condor requires an adequate food supply, open habitat in which food can readily be found and accessed, and reliable air movements that allow extended soaring flight (Snyder and Schmitt, 2002; as cited in USACE and CDFG, 2010). Most foraging has been documented in grasslands and oak woodlands, where individuals can easily launch into flight from nearly any location by running downhill, and where winds deflected by topographic relief usually provide the uplift necessary for extended flight (Snyder and Schmitt, 2002; as cited in USACE and CDFG, 2009). Most California condors forage within 50 to 70 kilometers (31 to 43 miles) of nesting areas, with core foraging areas ranging around 2,500 to 2,800 square kilometers (1,553 to 1,740 miles). This wide-ranging foraging area appears to be an adaptation to unpredictable food supplies.

The California condor primarily feeds on mammalian carrion, although remains of reptiles and birds have been occasionally found within nests (Collins *et al.*, 2000; as cited in USACE and CDFG, 2009). California condors are scavengers of fresh medium- to large-sized carcasses, such as sheep, cattle, deer, and elk

(Koford, 1953; Snyder and Snyder, 2000; Collins *et al.*, 2000; all as cited in USACE and CDFG, 2009). California condors are not known to feed on vehicle-killed animals, but in recent years, hunter-shot mule deer, shot or poisoned coyotes, and ground squirrels were consumed when available (Snyder and Schmitt, 2002; as cited in USACE and CDFG, 2009).

California condors typically breed annually but frequently breed less often. Observations of new pair formations have been observed in late fall and early winter (Snyder and Schmitt, 2002; as cited in USACE and CDFG, 2009). Once pairs have been formed, the California condors stay together year round for multiple years. California condors lay only one egg; this can occur from the last week of January through the first week of April, with an incubation period averaging 57 days. The hatching of the eggs ranges between the last week of March and the first week of June. The chicks are tended by both parents until the chicks are fledged, which occurs five and a half to six months after hatching. The chicks are fully dependent on their parents for approximately another six months, ending roughly a year after hatching, from early March to mid-May (Snyder and Schmitt, 2002; as cited in USACE and CDFG, 2009).

Threats: Major threats to this species include lead poisoning, collisions, poisoning due to ingestion of antifreeze, drowning and shooting. An increase in power lines and utility poles, which can result in collisions and electrocution; microtrash (e.g., bottle caps, pull tabs, broken glass, cigarette butts, small plastic items, lead bullets, and shell casings, which condors can ingest); long-term habitat degradation; and contaminants other than lead and antifreeze also have the potential to affect individuals.

Bald eagle (*Haliaeetus leucocephalus*)

Status: The bald eagle is designated as fully protect species under the Bald and Golden Eagle Protection Act.

General Distribution: The bald eagle occurs throughout most of North America. Historically, bald eagles bred throughout the mountains of coastal California. Currently, breeding populations exist on the Los Padres and San Bernardino National Forests. The largest wintering population of bald eagles in southern California is at Big Bear Lake in the San Bernardino Mountains. It has been successfully reintroduced as a breeding species on Santa Catalina Island after becoming extirpated from the Channel Islands in the 1950s.

Habitat and Habitat Associations: This species requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches (Zeiner et al., 1990a). Perches must be high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water (Zeiner et al., 1990a). Bald eagles are active diurnally and yearlong. Bald eagles are primarily fish eaters; however, they are opportunistic and will utilize avian and mammalian prey and carrion if readily available, especially in the nonbreeding season (Zeiner et al., 1990a). Bald eagles swoop from hunting perches, or soaring flight, to pluck fish from water (Zeiner et al., 1990a). Bald eagles roost communally in winter in dense, sheltered, remote conifer stands (Zeiner et al., 1990a). Eagle nests are characteristically large, typically 5 to 6 feet in diameter and 2 to 4 feet tall (Cornell, 2022). Nests are typically places in trees, but this species will nest on other surfaces when no suitable trees are available (Cornell, 2022) Nests are located 50-200 feet above ground, usually below tree crown (Zeiner et al., 1990a) and nests are usually located near a permanent water source (Zeiner et al., 1990a). In southern California, nesting most often occurs in large trees near water, but occasionally nests are on cliffs or the ground.

Natural History: Bald eagles are common as a winter migrant at a few favored inland waters in Southern California (Zeiner et al., 1990a). Occasionally they will lock talons and somersault downward several hundred feet (Cornell, 2021). Breeding season is February through July but may start as early as November (Zeiner et al., 1990a). Clutch size is 1-3 (Zeiner et al., 1990a) and incubation is usually 34-36 days (Zeiner et al., 1990a) followed by fledging at 10-12 weeks (Cornell, 2022). Semi-altricial young hatch asynchronously (Zeiner et al., 1990a). Bald eagles are monogamous, and breed first at 4-5 years (Zeiner et al., 1990a). Bald eagles are considered long-lived, with the oldest living bald eagle reported near Haines, Alaska at 28 years old (Cornell, 2022).

Threats: Threats to this species include mortality due to impact injuries (usually power line or tower), electrocution, trapping injuries (eagles caught in "sight bait" sets for fur bearers), automobile or train accidents, and poisoning from contaminated coyotes or other carcasses (Cornell, 2022). Territories have been abandoned after disturbance from logging, recreational developments, and other human activities near nests (Zeiner et al., 1990a).

Loggerhead shrike (*Lanius ludovicianus*)

Status: The loggerhead shrike is a CDFW Species of Special Concern and a USFWS Bird of Conservation Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The breeding range of the loggerhead shrike includes Alberta, Saskatchewan, and Manitoba in Canada; the majority of the United States except the Pacific Northwest; and Mexico (Yosef, 1996). This species is a common resident and winter visitor in lowlands and foothills throughout California.

Habitat and Habitat Associations: The loggerhead shrike prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species most often occurs in open-canopied valley foothill hardwood forests, valley-foothill hardwood-conifer forests, valley foothill riparian, pinyon-juniper woodlands, desert riparian, and Joshua tree habitats.

Natural History: The loggerhead shrike is a large-headed bird with a hooked beak and whitish underparts. The breeding season for this species generally begins in late January or early February, earlier than those of other sympatric passerine species, and lasts through July (Stephenson and Calcarone, 1999). Nests are typically constructed in well-concealed microsites in densely foliaged trees or shrubs (Bent, 1950). Females typically feed nestlings until fledging occurs at 16 to 20 days; however, males will feed nestlings if females are absent from the nest for extended periods of time (Stephenson and Calcarone, 1999). This species preys primarily on large insects, but will also take small birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. Loggerhead shrikes often impale their prey on barbed wire or other sharp objects.

Threats to Species: Breeding Bird Survey data indicate that loggerhead shrike populations are declining in most states (Sauer *et al.*, 1996). Threats include habitat loss and degradation, shooting, and pesticide and other toxic contamination.

Osprey (*Pandion haliaetus*)

Status: The osprey is a CDFW Watch List Species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The osprey is one of only two wild bird species with a worldwide distribution (the other is peregrine falcon). In California, this species typically breeds in the northern part of the state from the Cascade Range south to Lake Tahoe and along the coast to Marin County (Stephenson and Calcarone, 1999). Osprey is an uncommon visitor along the coast of southern California (Zeiner *et al.*, 1990a). Although this species is almost entirely migratory across its range, some areas of southern California, including Ventura County, support year-round residents (Ferguson-Lees and Christie, 2001).

Habitat and Habitat Associations: This species most commonly occurs along rivers, lakes, reservoirs, and seacoasts, often crossing land between bodies of water (AOS, 2022). Nests are typically found in tree snags, on cliffs, and among various manmade structures, usually near or above water.

Natural History: The osprey is easily distinguished by its unmarked white belly, wing shape, and flight style. This species typically breeds between late March and early June as the male arrives to breeding sites first followed by the female a few days later (Johnsgard, 1990). Nests consist of a massive accumulation of sticks and other debris and may be added to and used in successive years (Stephenson and Calcarone, 1999). A single brood of three eggs is incubated by both sexes. Ospreys hunt by initially scanning water surfaces from an elevated perch, often followed by a period of hovering, and then diving from heights of roughly 16-23 feet above the water (Stephenson and Calcarone, 1999). Prey consists almost entirely of salt or freshwater surface feeding fish; however, reptiles, sick or injured birds, crustaceans, or small mammals are sometimes taken (Ferguson-Lees and Christie, 2001).

Threats: Threats that have been identified for this species include disturbance from recreation and other activities near nests, development near lakes and rivers, and removal of suitable nesting sites.

California brown pelican (*Pelecanus occidentalis californicus*)

Status: California brown pelican is a California Fully Protected Species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: Resident to long-distance migrant. The seasonal movements of Brown Pelicans vary across their range. Many Atlantic populations disperse northward in the summer after breeding and return southward in autumn, probably to follow concentrations of fish. Some Atlantic and Gulf coast populations migrate further south along the coast during the coldest months of the year. On the Pacific coast, pelicans leave the Gulf of California after breeding, cross the Baja peninsula, and migrate as far north as British Columbia, returning south to breeding areas by the next winter.

Habitat and Habitat Associations: Brown Pelicans live year-round in estuaries and coastal marine habitats along both the east and west coasts. They breed between Maryland and Venezuela, and between southern California and southern Ecuador; often wandering farther north after breeding as far as British Columbia or New York. On the West Coast they breed on dry, rocky offshore islands. When not feeding or nesting, they rest on sandbars, pilings, jetties, breakwaters, mangrove islets, and offshore rocks (Cornell, 2022).

Natural History: Though they have an awkward gait on land, Brown Pelicans are strong swimmers and masterful fliers. They fly to and from their fishing grounds in V-formations or lines just above the water's surface. They and the closely related Peruvian Pelican are the only pelican species to perform spectacular head-first dives (typically ending in a huge splash visible from far away) to trap fish. Pelicans usually forage during the day but may feed at night during a full moon. Before swallowing their prey, they drain the water from their pouches, while gulls or terns often try to steal fish right out of their beaks. Highly social all year, pelicans breed in colonies of up to several thousand pairs—usually on small islands where they are free from terrestrial predators. The male defends a nest site and nearby perches for up to 3 weeks until he attracts a mate, and the pair is monogamous throughout the breeding season. The parents incubate their eggs with their feet. If disturbed suddenly they fly hastily, sometimes crushing their eggs. Pelicans regurgitate predigested fish onto the nest floor for their nestlings, later switching to whole fish once the young are big enough. The young can fly and fend for themselves after 3 months but take 3–5 years of age to reach sexual maturity (Cornell, 2022).

Brown Pelicans mostly eat small fish that form schools near the surface of the water—including menhaden, mullet, anchovies, herring, and sailfin mollies. A foraging pelican spots a fish from the air and dives head-first from as high as 65 feet over the ocean, tucking and twisting to the left to protect its trachea and esophagus from the impact. As it plunges into the water, its throat pouch expands to trap the fish, filling with up to 2.6 gallons of water. Pelicans usually feed above estuaries and shallow ocean waters within 12 miles of shore, but sometimes venture over the deeper waters past the narrow continental shelf of the Pacific coast. They occasionally feed by sitting on the surface and seizing prey with their bills, like other pelican species, usually when a dense school of fish is close to the surface and the water is too shallow and muddy to plunge. They also steal food from other seabirds, scavenge dead animals, and eat invertebrates such as prawns (Cornell, 2021).

Threats: There are no persistent threats identified for this species.

California least tern (*Sternula antillarum browni*)

Status: The California least tern is federally, and State listed as endangered, and is also fully protected under the California Fish and Game Code.

General Distribution: The least tern is a migratory shorebird that breeds along the California coast from April through August and winters in Mexico and Central and South America.

Habitat and Habitat Associations: Nests are shallow scrapes on open sandy beaches, or other relatively flat areas with little or no vegetation (Cornell, 2022).

Natural History: Elegant Terns nest in dense colonies. Some arrive at the colony already paired, but others associate in "clubs," small flocks that gather on the periphery of the colony and socialize. Clubs probably consist of younger or unpaired birds looking for mates. Elegant Terns are probably monogamous in their mating system. Both parents incubate the egg and feed the chick. As the chicks become mobile just a few days after hatching, the adults gather them into a crèche (a tight group) but can always recognize (and feed) their own chick in these groups. The parents continue to feed their chick well after it fledges, and family

groups remain together for 6 months or more after hatching. In the nonbreeding season, Elegant Terns are gregarious and often roost and feed among other seabirds, especially terns and gulls (Cornell, 2022)

Threats: They are vulnerable to disturbance by humans, dogs, cats, rats, and other natural and introduced predators (Cornell, 2022).

Mammals

Pallid bat (*Antrozous pallidus*)

Status: The pallid bat is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: Pallid bats have a broad geographic range, extending from southern British Columbia to central Mexico and from California east to the Midwestern United States (Harvey et al., 1999). This species occurs most commonly below elevations of roughly 6,000 feet (Stephenson and Calcarone, 1999). Pallid bats are year-round residents in California (Philpott, 1997).

Habitat and Habitat Associations: Pallid bats occur in a variety of habitats, including grasslands, shrublands, woodlands, scattered desert scrub, agricultural fields, and mixed conifer forests (Barbour and Davis, 1969; Hermanson and O'Shea, 1983; Orr, 1954; Philpott, 1997). This species appears to prefer edges and open areas without trees (SNFPA, 2001). Roosting sites include rock crevices, mines, caves, tree hollows, buildings, bridges, and culverts (Hermanson and O'Shea, 1983).

Natural History: The pallid bat is a large, light-colored bat with prominent ears. This is a social species, communicating through a variety of vocalizations to indicate territorial disputes, direct individuals to roosting sites, and facilitate mother-infant relations (Nagorsen and Brigham, 1993). Pallid bat maternity colonies form in early April and may contain from 12 to 100 individuals (Zeiner et al., 1990b). The diet of pallid bats primarily consist of large arthropods, including scorpions, crickets, moths, and praying mantids which are gleaned from the ground or on the surfaces of vegetation (Hermanson and O'Shea, 1983). Emergence from roosting sites typically begins thirty to sixty minutes after sunset, but can vary seasonally (Hermanson and O'Shea, 1983; Zeiner et al., 1990b). Foraging is usually concentrated into two periods with the first activity peak occurring 90-190 minutes after sunset, and the second occurs just prior to dawn (Hermanson and O'Shea, 1983; Zeiner et al., 1990b). Nagorsen and Brigham (1993) report that pallid bats will travel up to 2.5 miles between day roosts and foraging areas. Between activity periods, pallid bats may remain torpid for up to five hours (O'Shea and Vaughn, 1977). This species is known to hibernate but will periodically arouse to forage for food and water (Philpott, 1997).

Threats: Some of the threats that have been associated to the decline of this species in southern California include the destruction of buildings that provide suitable roosting and maternal colony sites, eradication of roosting colonies due to public health concerns, and urban expansion. As bat species often exhibit high site fidelity to maternity roosts and are highly sensitive to disturbance at these sites, local extirpations may be attributed to roost disturbance (Hermanson and O'Shea, 1983; Orr, 1954; O'Shea and Vaughn, 1977; Philpott, 1997).

Ringtail (*Bassariscus astutus*)

Status: The ringtail is a CDFW Fully Protected Species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: This species is widely distributed throughout California with the exceptions of the northeastern deserts and the Central Valley.

Habitat and Habitat Associations: Ringtails occur in a variety of habitats, including chaparral, coastal sage scrub, riparian scrub, oak woodlands, and riparian woodlands. This species prefers habitats in proximity to permanent water.

Natural History: Some authors consider ringtails a subfamily of the family Procyonidae, which includes the raccoons and coatis (Burt and Grossenheider, 1954). Ringtails are long, slender animals with large ears and eyes, semi-retractile claws, and distinct black and white bands on a bushy tail. This species nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests and breeding typically occurs between February and May (NatureServe, 2022). Ringtails are opportunistic feeders, but primarily prey on rodents, rabbits, birds, bird eggs, reptiles, and invertebrates (Zeiner *et al.*, 1990b).

Threats: While no persistent threats have been identified for this species, the degradation of preferred riparian habitats has been suggested as a potential threat (Stephenson and Calcarone, 1999).

Townsend's big-eared bat (*Corynorhinus townsendii*)

Status: The Townsend's big-eared bat is designated by CDFW as a California Species of Special Concern and is a U.S. Forest Service Sensitive species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The Townsend's big-eared bat (*Corynorhinus townsendii*) (big-eared bat) ranges throughout the western United States, British Columbia, Canada, and Mexico (Kunz and Martin, 1982). In the United States, it occurs in a continuous distribution in all the western states and east into western South Dakota, northwestern Nebraska, southwestern Kansas, western Oklahoma, and western Texas (Kunz and Martin, 1982). It also is known from isolated gypsum caves in northeast Texas, Oklahoma, and Kansas and from limestone areas in Arkansas, Missouri, Oklahoma, Kentucky, Virginia, and West Virginia (Kunz and Martin, 1982). These relict populations are thought to reflect post-Pleistocene climates (Kunz and Martin, 1982). In California, the CNDDB (CDFW, 2022) contains approximately 212 records for this species, of which 52 are from four counties in southern California: San Bernardino (33 records), San Diego (10 records), Riverside (five records) and Imperial (four records). There are no records for Los Angeles, Orange, or Ventura counties.

Habitat and Habitat Associations: The big-eared bat is primarily associated with mesic habitats characterized by coniferous and deciduous forests, although it also occurs in xeric areas (Kunz and Martin, 1982). In California, this species was historically associated with limestone caves and lava tubes located in coastal lowlands, agricultural valleys, and hillsides with mixed vegetation; it occurs in all parts of California,

except for alpine and subalpine areas of the Sierra Nevada (Zeiner *et al*. 1990b). The species also occurs in man-made structures and tunnels (Kunz and Martin, 1982), and it has been suggested that the big-eared bat has become more common in the western United States due to the availability of man-made structures (Kunz and Martin, 1982).

Natural History: Big-eared bats are relatively sedentary and are not known to disperse or migrate large distances. Maternity roosts are established in the warm parts of caves, mines, and buildings, with one or more clusters of females numbering up to about 100 individuals. Summer roosts of males are solitary. Young are born from late spring to early summer and are fully weaned by 42 days of age. First flight occurs by about 18 to 21 days. Big-eared bats take a variety of prey on the wing from the edge of forested habitats but also glean prey from vegetation to forage, including small moths, beetles, flies, lacewings, wasps, bees, and ants.

Threats: Big-eared bats are very sensitive to human disturbances and a single disturbance of a maternity roost or hibernation site may cause abandonment (Zeiner *et al*. 1990b). All known limestone cave sites in California, for example, have been abandoned (Zeiner *et al*. 1990b). Other plausible threats to big-eared bats resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites, roost site and foraging habitat degradation, such as trampling and invasive species, and pesticides that may cause secondary poisoning and affect prey abundance.

Western mastiff bat (*Eumops perotis californicus*)

Status: The western mastiff bat is a CDFW Species of Special Concern. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: The western mastiff bat occurs in two populations; one from the southwestern United States to central Mexico and the other from the northern and central portions of South America (Harvey *et al.*, 1999). The western or California mastiff bat subspecies primarily occurs from low to mid elevations in southern and central California southeast to Texas and south to central Mexico (Best *et al.*, 1996).

Habitat and Habitat Associations: The western mastiff bat utilizes a variety of habitat types including desert scrub, chaparral, mixed conifer forest, giant sequoia forests, and montane meadows (Philpott, 1997). In southern California this bat typically roosts in semiarid areas with low-growing chaparral that does not obstruct cliffs or rock outcrops (Best *et al.*, 1996). Because of its large wingspan, this bat requires roosts that have at least 2 m of free space to drop from to initiate flight. These bats utilize natural crevices in granitic and sandstone cliffs as well as crevices in buildings for roosting (Best *et al.*, 1996; NatureServe, 2022).

Natural History: The western mastiff bat is the largest bat in the United States with a total length of 15.7 to 18.5 cm (NatureServe, 2015). This bat breeds in early spring with most births likely occurring from June through July, and females usually give birth to one offspring (NatureServe, 2022). Colonies typically consist of less than 100 individuals (NatureServe, 2022). Western mastiff bats are primarily insectivorous, and the

diet contains a high proportion of moths (Philpott, 1997). Predators include peregrine falcon, American kestrel, red-tailed hawk, and barn owl (Best *et al.*, 1996).

Threats: Threats to the western mastiff bat include loss of habitat to development and the use of insecticides (Williams, 1986). In the southwest, loss of large open ponds used for drinking water threaten this subspecies, and activities that disturb or destroy cliff habitat (such as water impoundments, highway construction, and quarry operations) pose a threat as well (Texas Parks and Wildlife, 2009).

Hoary bat (*Lasiurus cinereus*)

Status: The hoary bat is a CDFW Special Animal and considered a County of Ventura locally important species. This taxon is not federally, or State listed as threatened or endangered.

General Distribution: This species is the most widespread North American bat and occurs throughout California, although distribution is patchy in the southeastern deserts.

Habitat and Habitat Associations: The hoary bat occurs in a wide variety of environments but prefers open habitats or habitat mosaics with access to trees for cover. Open areas or habitat edges are also preferred for foraging.

Natural History: This species is distinguishable by its size and color, exhibiting distinct white markings on hair tips over most of the body (Burt and Grossenheider, 1954). Hoary bats breed in autumn and young are typically born between mid-May and early June (Zeiner *et al.*, 1990b). Females bear young while roosting in trees and may leave the young at the roosting site while foraging (Zeiner *et al.*, 1990b). Typically, a solitary species, hoary bats are known to forage with many other bat species (CDFW, 2022). The primary diet of hoary bats consists of moths that are taken in flight; however, other flying insects are also consumed (Black, 1974, Whitaker *et al.*, 1977, 1981). There is a relatively high incidence of rabies in this species (Shump and Shump, 1982). No important predators are known, but owls likely prey on hoary bats (Zeiner *et al.*, 1990b).

Threats: No persistent threats have been identified for this species.

San Diego desert woodrat (*Neotoma lepida intermedia*)

Status: The San Diego desert woodrat is a CDFW Species of Special Concern. This taxon is not federally, or Sate listed as threatened or endangered.

General Distribution: This subspecies occurs in coastal California from San Luis Obispo south through the Transverse and Peninsular Ranges into Baja California.

Habitat and Habitat Associations: Desert woodrats inhabit Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats (Zeiner *et al.*, 1990b). This subspecies preferentially builds nests in areas with large boulders as they presumably provide better protection from predators (Thompson, 1982; Smith 1995). Desert woodrats will actively avoid open areas that lack adequate refuge sites (Thompson, 1982).

Natural History: San Diego desert woodrats construct dens of sticks, yucca leaves, tin cans, and other assorted materials in the crevices between boulders (Thompson, 1982). These dens also provide shelter for a variety of other small vertebrates. Desert woodrats generally breed from late October or November through April, and females can produce up to four litters of two to four young each year (Bleich and Schwartz, 1975). This subspecies forages nocturnally and is primarily herbivorous. Desert woodrats rely on a continuous supply of green vegetation for food and water. They do not drink water but rather depend upon plants such as agave and cactus for their water needs. They can even subsist on creosote year-round. Predators include snakes, owls, coyotes, badgers, skunks, and ringtails (Smith, 1995).

Threats: Loss of habitat, especially coastal sage scrub, is an ongoing threat to this subspecies.

Pocketed free-tailed bat (*Nyctinomops femerosaccus)*

Status: The pocketed free-tailed bat (*Nyctinomops femerosaccus)* is a California Species of Special Concern. This species is not federally, or State listed as threatened or endangered, and is not covered by the CVMSHCP.

General Distribution: This species is found in southern California, central Arizona, southern New Mexico, and western Texas, south into Mexico and Baja California (WBWG, 2017).

Habitat and Habitat Associations: This species is associated with pinyon juniper woodland, desert scrub, palm oasis, desert wash, and desert riparian habitats.

Natural History: This species roosts in rocky areas in high cliffs, usually in large colonies. It is also known to roost in buildings, caves, and under roof tiles. This species will form maternity colonies and female will each bear a single offspring between late June and July. The pocketed free-tailed bat forages primarily on moths, but will consume a variety of insects (WBWG, 2017).

Threats: Loss of roosting habitat and disturbance of roost sites (WBWG, 2017).

Mountain lion (*Puma concolor*)

Status: The mountain lion (Southern California/Central Coast ESU) is a State candidate species. It is not listed as federally threatened, or endangered.

General Distribution: The range of mountain lion extents from southern California along the central coast of California.

Habitat and Habitat Associations: During the evening hours, mountain lions will utilize many habitats within their range to hunt including riparian, scrub, chaparral, grassland, and woodland habitats (Dickson et al. 2005). While hunting, mountain lions prefer to stalk and pursue their prey along canyon bottoms and gentle slopes (Dickson and Beier 2006). Mountain lions will feed on steeper slopes in habitats with dense understory vegetation for cover (Benson et al. 2016). Although they will travel through open or human-disturbed habitat, they prefer expansive, intact, heterogeneous habitat (Dickson and Beier 2002; Dickson et al. 2005).

Natural History: The mountain lion is a large solitary felid that is considered both nocturnal and crepuscular but has been observed during daylight hours (Dickson and Beier 2002; Dickson et al. 2005). Within the State of California, mountain lions can be found in a variety of habitat types between sea level

and 10,000 feet in elevation. However, mountain lion habitat, population numbers, and genetic diversity have been declining rapidly, especially within Southern California populations (Yap et al. 2019).

Mountain lions exist at naturally low population densities, but they are very territorial and require large swaths of intact wilderness. In southern California, mountain lions have been found to utilize different habitats within a 24-hour period (Dickson and Beier 2002; Dickson et al. 2005). Mountain lions are mostly active during dusk and dawn, but their peak activity will shift to nocturnal patterns when closer to human developments. During daylight hours, mountain lions were frequently found in riparian habitats, suggesting that they prefer to rest in areas with dense understory vegetation for cover (Dickson and Beier 2002; Dickson et al. 2005). Mountain lion movement patterns tend to follow the distribution and abundance of deer, a common food source of southern California/Central Coast ESU populations (Grigione et al. 2002). Mountain lions are opportunistic hunters and will also feed on other ungulates (such as bighorn sheep, pronghorns, and domestic livestock), bobcats, coyotes, fox, skunks, raccoons, squirrels, rabbits, rodents, and insects (Currier 1983).

Mountain lions are typically active year-round and can reproduce at any time of the year, but the timing of reproduction may be influenced by prey abundance and climate. In North America, kitten births are most common between April and September (Currier 1983; Beier 1995). Mountain lions will form dens in rocky outcrops, caves, and other natural cavities when rearing young (Yap et al. 2019).

Threats: General threats to this species include habitat loss due to urban development, population fragmentation and decreased genetic diversity, vehicle strikes, intraspecific strife (male aggression towards conspecifics and infanticide), and ingestion of rodenticides (Beier 1993; Riley et al. 2014; Vickers et al. 2015). In addition, other threats to this species include depredation kills, poaching, disease, and human-caused wildfires (Beier and Barrett 1993; Vickers et al. 2015).

References

Alsop III, F.J. 2001. Birds of North America: Western Region. Smithsonian Handbooks. DK Publishing, Inc., New York.

AOS (American Ornithological Society [formerly American Ornithological Union]). 2020. Checklist of North and Middle American Birds. 7th ed. Am. Ornithological Society, Washington, D.C. Accessed September 2022. http://checklist.aou.org/taxa.

Barbour, R.W. and W.H. Davis. 1969. Bats of America. Lexington: The University Press of Kentucky.

Bates, C. 2006. Burrowing Owl (*Athene cunicularia*). in The Draft Desert Bird Conservation Plan: a strategy for reversing the decline of desert-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/desert.html.

Beier, P. 1993. Determining minimum habitat areas and habitat corridors for cougars. Conservation Biology 7: 94-108.

Benson, J. F., J. A. Sikich, and S. P. D. Riley. 2016. Individual and population level resource selection patterns of mountain lions preying on mule deer along an urban-wildland gradient. PLoS ONE 11: 1-16.

Bent, A.C.1937. Life histories of North American birds of prey. Part 1. U.S. National Museum Bulletin 137. 409 pp

Bent, A.C. 1950. Life histories of North American wagtails, shrikes, vireos, and their allies. U.S. National Museum Bulletin 197.

Best, T.L., W.M. Kiser, and P.W. Freeman. 1996. *Eumops perotis.* American Society of Mammalogists. Mammalian Species 534:1–8

Bjornn, T.C. and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. Pages 83-138 in W.R. Meehan (ed.) Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats. American Fisheries Society Special Publication 19.

Burt, W.H. and R.P. Grossenheider. 1952. A field guide to the mammals of North America north of Mexico. 3rd ed. Boston, MA: Houghton Mifflin Company.

Bury, R.B. 1970. *Clemmys marmorata*. Cat. Am. Amph. Rep. 100. 1-100

Bury, R.B. and T.G. Balgooyen. 1976. Temperature selectivity in the legless lizard, Anniella pulchra. Copeia 1976: 152-155.

CDFW (California Department of Fish and Wildlife). 2008. California Interagency Wildlife Task Group. CWHR version 8.2 personal computer program. Sacramento, CA.

_____. 2022. Database records search. RareFind 5: Version 5.2.14. California Department of Fish and Wildlife, Sacramento, CA. Accessed September 2022.

CNPS (California Native Plant Society). 2022. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. Accessed September 2022. http://www.cnps.org/inventory.

Commission for Environmental Cooperation (CEC). 2008. North American Monarch Conservation Plan. http://www3.cec.org/islandora/en/item/2350-north-american-monarch-conservation-plan-en.pdf.

Consortium of California Herbaria. 2022. On-line specimen data provided by participating herbaria. Accessed September 2022. http://ucjeps.berkeley.edu/consortium/.

Coulombe, H. N. 1971. Behavior and population ecology of the Burrowing Owl, *Speotyto cunicularia*, in the Imperial Valley of California. Condor 73:162–176

Currier, M. J. 1983. *Felis concolor*. Mammalian Species: 1-7.

Dickson, B. G. and P. Beier. 2006. Quantifying the influence of topographic position on cougar (Puma concolor) movement in southern California, USA. Journal of Zoology 271: 270-277.

Dickson, B. G., J. S. Jennes, and P. Beier. 2005. Influence of vegetation, topography, and roads on cougar movement in southern California. Journal of Wildlife Management 69: 264-276.

Dunk, J. R. 1995. White-tailed kite (*Elanus leucurus*). In The Birds of North America, No. 178 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.Dunne, P., D. Sibley and C. Sutton. 1988. Hawks in flight: the flight identification of North American raptors. Boston, MA: Houghton Mifflin Co

Fellers, G.M. and P.M. Kleeman. 2007. California Red-legged Frog (*Rana draytonii*) Movement and Habitat Use: Implications for Conservation.

Ferguson-Lees, J. and D.A. Christie. 2001. Raptors of the world. Boston, MA: Houghton Mifflin Company.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: Status and Distribution. Los Angeles Audubon Society, Los Angeles, CA.

Gervais, J.A., D.K. Rosenberg, and L. Comrack. 2008. Burrowing Owl (*Athene cunicularia*), In Shuford, W.D. and T. Gardali. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Grigione, M. M., P. Beier, R. A. Hopkins, D. Neal, W. D. Padley, C. M. Schonewald, and M. L. Johnson. 2002. Ecological and allometric determinants of home-range size for mountain lions (Puma concolor). Animal Conservation 5: 317-324.

Grinnell, J. and A.H. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna 27.

Harvey, M.J.; Altenbach, J.S.; Best, T.L. 1999. Bats of the United States. Arkansas Game and Fish Commission, Arkansas.

Hayes, M. P. and D. M. Krempels. 1986. Vocal sac variation among frogs of the genus Rana from western North America. Copeia 1986(4):927–936.

Hayes, M.P. and M.R. Tennant. 1985. Diet and feeding Behavior of the California red-legged frog, *Rana aurora draytonii* (Ranidae). The Southwestern Naturalis 30(4): 601-605.

Hermanson, J.W. and T.H. O'Shea. 1983. *Antrozous pallidus*. Mammalian Species 213: 1-8.

Hickman, J.C. (1993). The Jepson Manual: Higher Plants of California.

IELP (International Environmental Law Project). 2012. The Legal Status of Monarch Butterflies in California. http://monarchjointventure.org/images/uploads/documents/legal-status-of-california-monarchs.pdf.

Holland DC, Goodman RH Jr. 1998. A guide to the amphibians and reptiles of MCB Camp Pendleton, San Diego County, California. Final report prepared for AC/S Environmental Security Resources Management Division under Contract M00681-94-0039.

James, P.C. and R.H.M. Espie. 1997. Current status of Burrowing Owl in North America: an agency survey. Pp. 3-5 in J.L. Lincer and K Steenhoff (editors). The Burrowing Owl, its biology and management. Raptor Research Report No. 9. Allen Press, Lawrence, KS.

Jennings, M.R., and M.P. Hayes. 1994. Amphibians and reptile species of special concern in California. Contract 38023, report to the California Department of Fish and Game, Inland Fisheries Division. Sacramento, CA. 255 pp.

Jennings, M.R., M.P. Hayes, D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog and the western pond turtle on the list of endangered wildlife and plants.

Johnsgard, P.A. 1990. Hawks, eagles, and falcons of North America. Smithsonian Institution Press, Washington, DC. 403 pp.

Johnson, D.H., D.C. Gillis, M.A. Gregg, J.L. Rebholz, J.L. Lincer, and J.R. Belthoff. 2010. User guide to installation of artificial burrows for burrowing owls. Tree Top Inc., Selah, Washington, USA.

Kuchta SR, Tan AM. 2005. Isolation by distance and post glacial range expansion in the Rough-skinned newt, *Taricha granulosa*. Molecular Ecology 14: 225–244.

Kochert, M.N, C.L. McIntyre, and E.H. Crag. 2002. Golden Eagle (Aquila chrysaetos). In A. Poole and F. Gill lEDs. I, The Birds of North America, No. (in press). Academy of Natural Sciences, Philadelphia, PA and American Onithologists' Union, Washington, DC U.S.A.

Kunz, T.H., and R.A. Martin. 1982. *Plecotus townsendii*. American Society of Mammalogists. Mammalian Species 175:1–6.

Limas B. 2001. "Circus cyaneus" Animal Diversity Web. University of Michigan Museum of Zoology. Accessed September 2022. http://animaldiversity.ummz.umich.edu/site/accounts/information/Circus_cyaneus.html.

Loredo, I., D. Van Vuren, and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. Journal of Herpetology 30:282–285.

Mason, H.L. 1957. A Flora of the Marshes of California. University of California Press, Berkeley.

McEwan, D., and T.A. Jackson. 1996. "Steelhead Restoration and Management Plan for California."

Moyle, P.B. 2002. Inland Fishes of California. 2d ed. University of California Press, Berkeley, California. 517 pp.

Nagorsen, D.W. and R.M. Brigham. 1993. Bats of British Columbia. Royal British Columbia Museum Handbook. UBC Press in collaboration with Royal British Columbia Museum.

Natureserve. 2022. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Accessed September 2022. http://www.natureserve.org/explorer.

NMFS (National Marine Fisheries Service). 1997. Endangered and threatened species: Listing of several evolutionary significant units (ESUs) of West Coast steelhead. Federal Register 62(159): 43937-43954.

____. 2002. Endangered and threatened species, range extension for endangered steelhead in southern California. Federal Register 67(84): 21586-21598

_____. 2006. Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead. Federal Register 71: 834-862.

O'Shea, T.J. and T.A. Vaughn. 1977. Nocturnal and seasonal activities of the pallid bat, *Antrozous pallidus*. Journal of Mammalogy. 58: 269-284

Orians, G.H. 1961. The ecology of blackbird (Agelaius) social systems. Ecol. Monogr. 31: 285-312.

Orloff, S. 2011. Movement patterns and migration distances in an upland population of California Tiger Salamander (*Ambystoma californiense*). Herpetological Conservation and Biology. 6.

Orr, R.T. 1954. Natural history of the pallid bat, *Antrozous pallidus*. Proceedings of the California Academy of Science 28: 165-264.

Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Bird Management, U.S. Fish and Wildlife Service

Philpott, W. 1997. Summaries of the life histories of California bat species. Unpublished document. USDA Forest Service, Sierra National Forest, Pineridge Ranger Station.

Poulin, R. G., L. D. Todd, E. A. Haug, B. A. Millsap, and M. S. Martell. 2011. Burrowing Owl (Athene cunicularia), version 2.0. In the Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bna.61.

Riley, S. P. D., L. E. K. Serieys, J. P. Pollinger, J. A. Sikich, L. Dalbeck, R. K. Wayne, and H. B. Ernest. 2014. Individual behaviors dominate the dynamics of an urban mountain lion population isolated by roads. Current Biology 24: 1989-1994.

Rossman, D. A., N. B. Ford, and R. A. Siegel. 1996. The garter snakes: evolution and ecology. University of Oklahoma Press, Norman. 332pp.

Rossman, D.A. and G.R. Stewart. 1987. Taxonomic reevaluation of Thamnophis couchii (Serpentes: Colubridae). Occasional Papers of the Museum of Zoology, Louisiana State University 63: 1-25

Searcy, C. A., E. Gabbai-Saldate*, and H. B. Shaffer. 2013. Microhabitat use and migration distance of an endangered grassland amphibian. Biological Conservation 158:80-87.

Shaffer, H.B., G.M. Fellers, S. Randal Voss, J.C. Oliver and G.B. Pully. 2004. Species boundaries, phylogeography and conservation genetics of the red-legged frog (*Rana auror/draytonii*) complex. In Molecular Ecology 2004. Volume 13 pg. 2667-2677.

Shuford, W. D., and T. Gardali (editors). 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Shump, K. A., & Shump, A. U. 1982. *Lasiurus cinereus*. Mammalian species, (183), 1-6

Smith, F.A. 1995. Den characteristics and survivorship of woodrats (*Neotoma lepida*) in the eastern Mohave Desert. Southwestern Naturalist 40(4): 366–372.

SNFPA (Sierra Nevada Forest Plant Amendment). 2001. Framework EIS. United States Department of Agriculture, Forest Service.

Stebbins, R.C. 2003. Western reptiles and amphibians 3rd ed. Boston: Houghton Mifflin Co.

_____. 1954. Amphibians and reptiles of western North America. New York: McGraw-Hill.

_____. 1951. Amphibians of Western North America. Berkeley: University of California Press.

Stephenson, J.R and G.M. Calcarone. 1999. Southern California mountains and foothills assessment: Habitat and species conservation issues. General Technical Report GTR-PSW-172. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture.

Storer, T.I. 1925. A synopsis of the amphibian of California. University of California Publications in Zoology 27: 1-342.

Tartarian, P. 2008. Movement Patters of California Red-legged Frogs (*Rana draytonii*) in an Inland California Environment. Published in Herpetological Conservation Biology 3(2): pg 155-169.

Texas Parks and Wildlife. 2009. Western Mastiff Bat (*Eumops perotis*) Fact Sheet. [online] https://tpwd.texas.gov/huntwild/wild/species/westmastiff/. Accessed September 2022.

Thelander, C. G. 1974. Nesting territory utilization by golden eagles (Aquila chrysaetos) in California during 1974. Calif. Dept. Fish and Game, Sacramento. Wildl. Manage. Branch Admin. Rep. 74-7. 19pp.

Thompson, S.D. 1982. Spatial utilization and foraging behavior of the desert woodrat, *Neotoma lepida lepida*. Journal of Mammalogy 63(4): 570–581.

Thomsen, L. 1971. Behavior and ecology of Burrowing Owls on the Oakland Municipal Airport. Condor 73:177–192

Trenham, Peter C. 2001. "Terrestrial Habitat Use by Adult California Tiger Salamanders." Journal of Herpetology 35, no. 2

USACE and CDFG (United States Army Corps of Engineers and California Department of Fish and Game). 2009. Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Joint Environmental Impact Statement and Environmental Impact Report. SCH No. 2000011025.

Urquhart, F. 1987. The Monarch Butterfly: International Traveler. Nelson Hall. pp. 92,119,147,161-163.

USFWS (U.S. Fish and Wildlife Service). 1997. Draft recovery plan for marsh sandwort *(Arenaria paludicola*) and Gambels watercress (*Rorippa gambelii*). FWS, Portland, Oregon.

_____. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*).

_____. 2016 Recovery Plan for the Santa Barbara County Distinct Population Segment of the California Tiger Salamander (Ambystoma californiense). Region 8 U.S> Fish and Wildlife Service, Ventura California.

_____. 2022. Morro Shoulderband. Accessed September 2022. https://www.fws.gov/species/morro-shoulderband-helminthoglypta-walkeriana.

Vickers, T. W., J. N. Sanchez, C. K. Johnson, S. A. Morrison, R. Botta, T. Smith, B. S, Cohen, P. R. Huber, H. B. Ernest, and W. M. Boyce. 2015. Survival and mortality of pumas (Puma concolor) in a fragmented, urbanizing landscape. PLoS ONE 10: 1-18.

WBWG (Western Bat Working Group) 2017. Western Bat Species. Available at Western Bat Species – WBWG. Accessed September 2022.

Wilkerson, R. L., and R. B. Siegel. 2010. Assessing changes in the distribution and abundance of burrowing owls in California, 1993–2007. Bird Populations 10:1–36.

Williams, D.F. 1986. Mammalian species of concern in California. California Department of Fish and Game Report 86-91. Sacramento, CA: California Department of Fish and Game.

Yap T., Cummings B., and J. P. Rose. 2019. Before the California Fish and Game Commission: A petition to list the Southern California/Central Coast Evolutionary Significant Unit (ESU) of Mountain lions as threatened under the California Endangered Species Act (CESA). Center for Biological Diversity and the Mountain Lion Foundation. 25 June 2019.

Yosef, R. 1996. Loggerhead shrike (*Lanius ludovicianus*). In: Poole, A.; Gill, F., eds. The birds of North America, No. 231. Philadelphia, PA: The Academy of Natural Sciences and Washington, DC: The American Ornithologists' Union.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990b. California's Wildlife. Vol. III. Mammals. California Department of Fish and Wildlife, Sacramento.

Zeiner, D.C.; Laudenslayer, W.F., Jr.; Mayer, K.E.; White, M., eds. 1990a. California’s Wildlife: Volume II: Birds. California Statewide Wildlife Habitat Relationship System. State of California, the Resources Agency, CDFG. Sacramento, CA.

Zeiner, D.C.; Laudenslayer, W.F., Jr.; Mayer, K.E.; White, M., eds. 1988. California’s Wildlife Volume I: Amphibians and Reptiles. California Statewide Wildlife Habitat Relationship System. State of California, the Resources Agency, CDFG. Sacramento, CA.

Appendix E4

Aquatic Resources Delineation Report

AQUATIC RESOURCES DELINEATION REPORT
Diablo Canyon Power Plant Decommissioning Project

Prepared for:

County of San Luis Obispo Department of Planning and Building
976 Osos Street, Room 200
San Luis Obispo, CA 93408

COUNTY OF SAN LUIS OBISPO
PLANNING & BUILDING

Prepared by:

Aspen Environmental Group
615 N. Benson Avenue, Suite E
Upland, CA 91786

Aspen environmental group

September 2022

Aquatic Resources Delineation Report

Diablo Canyon Power Plant Decommissioning Project
San Luis Obispo County, California

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional determination and delineation for the above-referenced project.

Justin M. Wood, M.S.
Senior Biologist
Aspen Environmental Group

September 2022

Contents

Tables

Attachments

1.0 Introduction

This report was prepared under contract to the County of San Luis Obispo Department of Planning and Building (County) to describe the findings of an investigation of jurisdictional features conducted by Aspen Environmental Group (Aspen) for the Diablo Canyon Power Plant (DCPP) Decommissioning Project (Project). The DCPP is operated by Pacific Gas and Electric (PG&E). The Project is located in San Luis Obispo County, approximately seven miles northwest of Avila Beach, California (Figure 1, Attachment 1).

The Study Area extends 100 feet from the DCPP and associated facilities as well as the proposed borrow site located to the north of the DCPP (Figure 1, Attachment 1). The Study Area is bordered to the north and east by natural habitats and grazing lands, and the Pacific Ocean to the west and south. Diablo Creek flows west along the northern edge of the DCPP.

The assessment was conducted by Aspen Biologists Justin Wood and Chris Huntley on July 11-12, 2022. This assessment was conducted to determine the extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Central Coast Regional Water Quality Control Board (CCRWQCB), California Coastal Commission (CCC) and the California Department of Fish and Wildlife (CDFW) that occur within the Study Area.

1.1 Lead Agency Name and Address

County of San Luis Obispo
Department of Planning and Building
976 Osos Street, Room 200
San Luis Obispo, CA 93408

1.2 Contact Person and Phone Number

Susan Strachan
Nuclear Power Plant Decommissioning Manager
Phone: (805) 788-2129
Email: sstrachan@co.slo.ca.us

1.3 Site Access

Driving directions to the Survey Area are provided below in Table 1.

Table 1. Driving Directions to the Survey Area

From the City of San Luis Obispo:
Take Interstate 101 south towards Los Angeles.
Exit San Luis Bay Dr. and turn right.
Turn right on Avila Beach Dr.
Turn right on Diablo Canyon Rd.
Reach gate with security guard.
Continue approximately 7 miles north to the Survey Area.

2.0 Project and Property Description

2.1 Project Description

PG&E proposes to decommission the DCPP, which involves the decommissioning and dismantlement (referred to as D&D) of the existing power plant. The DCPP is a two-unit (i.e., two reactor units) nuclear-powered electrical generating station that began commercial operation in 1985 for Unit 1 and 1986 for Unit 2 and is the last nuclear power plant still operating in California. The Nuclear Regulatory Committee (NRC) licensed the two reactors to operate until November 2, 2024 (Unit 1) and August 26, 2025 (Unit 2). Upon final shutdown of the reactor units and assuming all permit conditions are acceptable, PG&E intends to transition DCPP immediately from an operating status into a decommissioning status, meaning the facility would be shut down and the process of dismantling, decontaminating, and removing it would begin. Table 2 provides a summary of the Project activities by phase.

Table 2. Decommissioning Project Activities Summary

Phase 1: Pre-Planning and Decommissioning Project Activities (2024-2031)

- **Cold and Dark Modifications.** Install electrical infrastructure to supply power for decommissioning
- **Site Security Modifications.** Change security infrastructure to support decommissioning
- **Site Infrastructure Modifications.** Change site facilities, civil features, utilities, and equipment
- **Railyard Modifications.** Modify (under separate permits) and use railyard(s) for waste shipments (Pismo Beach – contingency site, Santa Maria or Santa Barbara County)
- **System and Area Closure.** Remove select systems, structures, and components from structures
- **Intake Structure Modification.** Modify Intake Structure to load barges for bulk waste transport
- **Auxiliary Saltwater System Cooling of Spent Fuel Pool (SFP).** Cool SFP via the auxiliary saltwater system (current method)
- **Site Characterization Study.** Identify radioactive and non-radioactive contamination at DCPP
- **Decontamination.** Remove, remediate, and/or abate hazardous materials in structures
- **Building Demolition.** Remove on-site structures
- **Stormwater Management.** Implement compliance measures for stormwater control
- **Waste Transportation.** Transport radiological and non-radiological waste materials off site
- **Reactor Pressure Vessel and Internals Removal and Disposal.** Remove reactor pressure vessels and internal components and transport off site for disposal
- **Large Component Removal.** Remove large components prior to building demolition
- **Utilities, Remaining Structures, Roads, and Parking Area Demolition.** Remove facilities not needed to support decommissioning or final site use
- **Remove Power Plant 230 kilovolt (kV) and 500 kV Infrastructure.** Remove 230 kV and 500 kV lines, poles, and towers from the power block to the switchyards (switchyards are to be retained)
- **Discharge Structure Removal and Restoration.** Remove discharge concrete structure and restore area to natural conditions
- **Construct Waste Storage Facilities**
  - Construct a GTCC Waste Storage Facility for storing radioactive materials regulated by Title 10 of the Code of Federal Regulations (10 CFR) Part 72 (Part 72)1
  - Construct a Non-Radioactive Waste Storage Facility for storing general demolition debris including hazardous, non-hazardous, and universal wastes (i.e., hazardous wastes more widely produced such as batteries, mercury-containing equipment, lamps, aerosol cans, and pesticides)
- **SNF and GTCC Waste Transfer to ISFSI.** After a cooling and decay period (i.e., time to reduce radioactivity), SNF and GTCC waste would be moved to the ISFSI and new GTCC Waste Storage Facility, respectively, for storage (SNF will be transferred to dry cask storage within approximately 4 years after each reactor shutdown)
- **Water Management.** Produce fresh water and cooling water, and manage wastewater

Table 2. Decommissioning Project Activities Summary

Phase 1: Pre-Planning and Decommissioning Project Activities (2024-2031)

- **Soil Remediation.** Remediate (i.e., clean up and restore from environmental damage) radiological and non-radiological impacted (i.e., contaminated) soils
- **Final Status Surveys.** Complete surveys to ensure the DCPP site meets the radioactivity release criteria specified in the NRC-required License Termination Plan (LTP)
- **Initial Site Restoration.** Backfill, grade, and landscape to restore excavated and disturbed features at DCPP to natural conditions
- **LTP.** Prepare and submit an LTP to the NRC
- **Firing Range.** Remove the existing Firing Range and construct a new indoor Firing Range
- **Retain Breakwaters.** Release Breakwaters from Part 50 facility operating license for reuse by others
- **Retain Intake Structure.** Release Intake Structure from Part 50 facility operating license for reuse by others

Phase 2 – Completion of Soil Remediation, Final Status Surveys, and Final Site Restoration (2032-2039)

- **Complete Waste Transportation.** Complete transport of remaining radiological and non-radiological waste materials off site
- **Complete Soil Remediation.** Complete remediation of radiological and non-radiological-impacted soils
- **Complete Final Status Surveys.** Complete surveys to ensure the site meets the release criteria
- **Intake Structure Closure.** Seal openings of Intake Structure with concrete bulkheads and clear deck to support reuse by third-party
- **NRC Part 50 License Termination.** Terminate DCPP's NRC Part 50 facility operating licenses
- **Utilities, Remaining Structures, Roads, and Parking Area Demolition.** Remove facilities not needed to support the retained DCPP facilities
- **Final Site Restoration (FSR).** Continue to backfill, grade, and landscape to restore excavated and disturbed features, including the former Firing Range, at DCPP to natural conditions
- **Long-Term Stormwater Management.** Install post-construction stormwater controls
- **Post-Final Site Restoration Monitoring.** Monitor (up to 5 years) efforts to restore the DCPP site and ensure restoration criteria are met
- **Construct Bluff-Top Road.** Construct new blufftop road segment to connect Diablo Canyon Road with North Ranch Road/Pecho Valley Road
- **Release of Marina and Retention for Reuse by Third-Party.** Improve Marina area, including new parking areas, bathroom2, and boat hoist; Reuse of Marina by third-party (to continue past 2039) Complete Waste Transportation. Complete transport of remaining radiological and non-radiological waste materials off site

Source: PG&E, 2021a – Table 2.1-1.

Acronyms: CFR = Code of Federal Regulations, DCPP = Diablo Canyon Power Plant, FSR = Final Site Restoration, GTCC = Greater Than Class C, ISFSI = Independent Spent Fuel Storage Installation, kV = kilovolt, LTP = License Termination Plan, NRC = Nuclear Regulatory Commission, SFP = Spent Fuel Pool, SNF = Spent Nuclear Fuel

Notes:

[1] GTCC wastes are defined as those wastes with concentrations of radionuclides which exceed the limits established for Class C Low-Level Radioactive Waste. For the Project, the GTCC waste inventory includes GTCC waste that has been generated throughout normal operations of the DCPP units and the GTCC waste that would be generated during RPV internals segmentation.

[2] While the entire Marina area was evaluated in this EIR, the final design and location of the bathroom facilities would be completed by the third party after release of the Marina from the Part 50 license (end of 2034). The third-party user would apply for separate land use and building permits for the bathroom facilities (septic or other system) and other Marina improvements.

Facilities remaining following completion of Phases 1 and 2 include:

- primary and secondary access roads, internal roads (including existing road over Diablo Creek)
- 230 and 500 kV switchyards
- Independent Spent Fuel Storage Installation (ISFSI)
- Water Reservoirs
- New Security Building, Firing Range, and GTCC Waste Storage Facility (built in Phase 1).

In addition, PG&E proposes to retain the existing East and West Breakwaters and Intake Structure for potential future use by others.

2.2 Project Location

The Project is located within the Port San Luis United States Geological Survey (USGS) 7.5-minute topographic quadrangle, approximately seven miles northwest of Avila Beach, San Luis Obispo County (Figure 1, Attachment 1).

3.0 Existing Conditions

3.1 Topography and Surrounding Land Uses

The Study Area is in the southwestern portion of San Luis Obispo County, California and the middle portion of the Port San Luis United States Geological Survey (USGS) 7.5' Quadrangle (USGS, 2018). Site elevations range from 0 to 750 feet above mean sea level (MSL). The coastal border of the Study Area is defined by rocky bluffs with gently to moderately sloping terraces. Structures comprising the DCPP complex are located several hundred feet from the shoreline on a flat terrace. The reactors and associated primary systems equipment for Units 1 and 2 are housed in separate, but adjacent, containment structures on the main terrace at 85 feet above MSL. Topography of the borrow site and associated access route consists of steep west-facing slopes ranging in elevation from 300 to 750 feet above MSL. Within the Study Area, small drainages may convey water into Diablo Creek.

Land uses adjacent to the survey area varies, ranging from open space to industrial. Montaña de Oro State Park is located adjacent to the North Ranch (land north of the DCPP site) of the PG&E property. The North Ranch contains the Point Buchon Trail. Montaña de Oro State Park includes campsites and various hiking trails and other recreational opportunities. The nearest residential communities are in Avila Beach and Los Osos. Avila Beach is located near the main DCPP Access Gate, which is approximately seven miles southeast of the DCPP site. Los Osos is situated adjacent to Montaña de Oro State Park and is located eight miles north of the DCPP site. Other cities and unincorporated residential areas exist along the coast and inland at distances of more than eight miles from the DCPP site. The closest public facilities to the DCPP site are the Port San Luis Harbor District facilities, which are located west of Avila Beach.

The Irish Hills are considered an important ecological resource in the region and provides habitat for resident and migratory wildlife species. Diablo Creek supports populations of the federally listed south-central California coast steelhead (*Oncorhynchus mykiss irideus*) and California red-legged frogs (*Rana aurora draytonii*).

3.2 Vegetation

Vegetation in the Study Area consists of a mosaic of upland scrub and woodland communities with riparian thickets in some areas. Riparian communities are located along Diablo Creek and are dominated by stands of arroyo willows (*Salix lasiolepis*) and coast live oak (*Quercus agrifolia*) (Figure 3, Attachment 1). Upland scrub and grassland communities are present throughout the Study Area and are dominated by California sagebrush (*Artemisia californica*), bush monkeyflower (*Diplacus aurantiacus*), toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), and poison oak (*Toxicodendron diversilobum*).

Non-native vegetation is located throughout the Study Area and consists primarily of wild oat (*Avena fatua*), slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), sweet fennel (*Foeniculum*

vulgare), and Russian thistle (*Salsola tragus*). Non-natives are found both in large stands adjacent to developed areas and interspersed within native communities within the Study Area.

Vegetation within the Study Area was mapped by Terra Verde as part of the Terrestrial Biological Resources Assessment in 2020 and were verified by Aspen during the wetland delineation in 2022 (PG&E, 2020). The vegetation was mapped in detail following descriptions identified by *A Manual of California Vegetation* (Sawyer et al., 2009). Vegetation communities have been designated as sensitive when they have a California State Rarity Ranking of one, two, or three (S1, S2, S3). These communities have been determined to be rare or threatened in California. A ranking of S1 has fewer than six viable occurrences statewide and/or up to 518 hectares; a ranking of S2 has between 6-20 viable occurrences statewide and/or up to between 518-2,590 hectares; and a ranking of S3 has between 21-100 viable occurrences statewide and/or up to between 2,590-12,950 hectares. Rankings of S4 and S5 are secure in the state.

Riparian vegetation types mapped within the Study Area include arroyo willow thickets and coast live oak woodland (see Table 3). The native riparian vegetation types tend to integrate making it difficult to define the exact limits of each vegetation type.

Upland vegetation types were mapped within the Study Area (see Table 3). Communities and monotype patches of non-native species include buck brush chaparral, California sagebrush scrub, Coast live oak woodland and forest, coyote brush scrub, wild oats and annual brome grasslands, needle grass – melic grass grassland, bush monkeyflower scrub, toyon chaparral. Upland vegetation types tend to intergrade blurring the limits of each vegetation type in some areas.

Table 3. Vegetation and Other Cover Types within the Survey Area (acres)

Vegetation Type	Limits of Disturbance (Acres)	Survey Buffer (Acres)	Total Survey Area (Acres)
Arroyo Willow Thickets	0.02	1.21	1.23
Bush Monkeyflower Scrub	2.39	1.88	4.27
California Coffee Berry Scrub	0.14	0.46	0.59
California Sagebrush Scrub	3.84	20.23	24.07
Coast Live Oak Woodland	0.19	5.58	5.77
Coastal Bluff Scrub	0.14	1.51	1.65
Coyote Brush Scrub	2.41	4.76	7.17
Needle Grass - Melic Grass Grassland	0.83	0.23	1.06
Toyon Chaparral	0.08	0.19	0.27
Wild Oats and Annual Brome Grassland	7.83	39.12	46.95
Other Cover Types			
Developed	81.45	14.36	95.81
Ruderal / Anthropogenic	2.04	1.17	3.22
Total	**101.37**	**90.70**	**192.07**

Coastal, Riparian and Wetland Vegetation Communities

Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)

Arroyo willow thickets occurs on stream banks and benches, slope seeps, and along drainages at elevations below 7,120 feet above MSL. This vegetation community is present in the lower reaches of Diablo Creek. The overstory is dominated by arroyo willow forming an intermittent to continuous canopy. A multi-layered understory is dominated by blue elderberry (*Sambucus nigra* ssp. *caerulea*), American dogwood (*Cornus sericea* ssp. *sericea*), and California blackberry (*Rubus ursinus*). Emergent herbaceous vegetation on the slopes and within the channel bottom is dominated by western water hemlock (*Cicuta douglasii*), giant horsetail (*Equisetum telmateia* ssp. *braunii*), cattail (*Typha* sp.), low bulrush (*Isolepis cernua*), and cutleaf water parsnip (*Berula erecta*). This community is dominated by hydrophytic species and is considered a coastal wetland and meets the definition of Environmentally Sensitive Habitat Areas (ESHA) wherever it occurs within the Coastal Zone. Arroyo willow thickets are not designated as a CDFW sensitive community (CDFW, 2022).

Coast Live Oak Woodland and Forest (*Quercus agrifolia* Forest and Woodland Alliance)

Coast live oak woodland and forest occurs on Canyon bottoms, slopes, and flats. Soils are deep; sandy or loamy with high organic matter at elevations below 4,000 feet above MSL. This community is present in the upper reaches of Diablo Creek. Upper Diablo Creek above the 500kV yard supports a wide riparian woodland dominated by coast live oak, with California bay (*Umbellularia californica*), and big-leaf maple (*Acer macrophyllum*) in the overstory. The understory is open to intermittent and is dominated by poison oak and California coffeeberry (*Frangula californica*). Herbaceous vegetation along the edge of and emergent in the creek bottom is dominated by western water hemlock, giant horsetail, and hoary nettle (*Urtica dioica* ssp. *holosericea*). Coast live oak woodland and forest are not designated as a CDFW sensitive community (CDFW, 2022) however, CDFW is likely to exert jurisdiction over coast live oak woodlands that are growing in and adjacent to Diablo Creek.

Upland Vegetation Types

Buck Brush Chaparral (*Ceanothus cuneatus* Shrubland Alliance)

Buck brush chaparral occurs in shallow, rocky, and well drained soils on ridges and upper slopes below 5,900 feet above MSL. This community is present on the steep slopes and ridgelines along the northern boundary of the Study Area. It is dominated by buck brush (*Ceanothus cuneatus*) with black sage (*Salvia mellifera*) as a co-dominant, which form a continuous shrub canopy. Other species including California sagebrush and redberry (*Rhamnus crocea*) are also present. Buck brush chaparral is not designated as a CDFW sensitive community (CDFW, 2022).

California Sagebrush Scrub (*Artemisia californica* Shrubland Alliance)

California sagebrush scrub occurs on steep slopes and low-gradient deposits along streams at elevations below 4,000 feet above MSL. This community occurs along the coastal terrace and on slopes and canyons within the Study Area. California sagebrush is dominant with coyote brush, black sage, poison oak, and bush monkeyflower present within the community at low densities. The shrub canopy is continuous to intermittent. Coastal goldenbush and big saltbush (*Atriplex lentiformis*) are present at low cover in stands along the coastal terrace. Giant wild rye (*Elymus condensatus*), deerweed (*Acmispon glaber*), spiny redberry (*Rhamnus crocea*), and western bracken fern (*Pteridium aquilinum* var. *pubescens*) are common components of more inland stands within the Study Area. The understory is variable, from sparse cover of annual grasses to continuous cover of annual and perennial grasses and forbs. California sagebrush scrub is not designated as a CDFW sensitive community (CDFW, 2022).

Coyote Brush Scrub (*Baccharis pilularis* Shrubland Alliance)
Coyote Brush Scrub occurs in variety of habitats including coastal bluffs, terraces, stream sides, open exposed slopes, ridges, and gaps in forest stands at elevations below 5,000 feet above MSL. Within the Study Area this community occurs along the margins of roads and developed portions of the site, where weed abatement and vegetation management activities regularly occur. Coyote brush is dominant with California sagebrush, California coffeeberry, and black sage occurring in lower densities. Herbaceous species within these areas include sweet fennel, tocalote (*Centaurea melitensis*), and jubata grass (*Cortaderia jubata*). Coyote bush scrub is not designated as a CDFW sensitive community (CDFW, 2022).

Wild Oats and Annual Brome Grasslands (*Avena spp. – Bromus spp.* Herbaceous Semi-Natural Alliance)
This community is widespread and may occur in any topographic setting in foothills, waste places, rangelands, and openings in woodlands at elevations below 7,200 feet above MSL. Annual brome grassland is present in the borrow site and developed areas within the Study Area. The dominant plant in these areas is wild oat, slender wild oat, ripgut grass, false brome (*Brachypodium distachyon*), and rye grass (*Festuca perennis*) growing with other weedy species such as Italian thistle (*Carduus pycnocephalus*), and black mustard (*Brassica nigra*). Annual brome grassland is not designated as a CDFW sensitive community (CDFW, 2022).

Needle Grass – Melic Grass Grassland (*Nassella* (=*Stipa*) spp. – *Melica* spp. Herbaceous Alliance)
Needle grass – melic grass grassland occurs in open areas with soil that have a high clay content, loamy, sandy, or silty derived from mudstone, sandstone, or serpentine substrates at elevations below 5,600 feet above MSL. Fragmented patches of needle grass grassland occur within openings of bush monkey flower scrub and annual brome grasslands within the Study Area. This community is characterized by purple needle grass (*Stipa pulchra*) occurring at 20 to 60 percent cover in the herbaceous layer. Little California melic (*Melica imperfecta*) is present, with non-native annual grasses often comprising most of the herbaceous cover. Needle grass - melic grass grassland is a CDFW sensitive natural community (CDFW, 2022).

Bush Monkeyflower Scrub (*Diplacus aurantiacus* Shrubland Alliance)
Bush monkeyflower scrub occurs on gentle to steep northerly slopes at elevations between 100 and 2,000 feet above MSL. This community occurs on the north-facing slope above upper Diablo Creek within the borrow site. This community is an early successional habitat on site, regenerating from past vegetation clearing on this slope. Patches with distinct stages of regeneration are present within the Study Area, based on a variable disturbance history. Younger patches form an intermittent shrub canopy dominated entirely by bush monkeyflower, with annual grasses and forbs. The understory is irregular, occasionally with co-dominant poison oak, southern hedge nettle (*Stachys bullata*), California man-root (*Marah fabacea*), purple needle grass, and California melic (*Melica californica*). Bush monkeyflower scrub is not designated as a CDFW sensitive community (CDFW, 2022).

Toyon Chaparral (*Heteromeles arbutifolia* Shrubland Association)
Toyon chaparral usually occurs on steep, north-facing slopes at elevations between 100 and 4,300 feet above MSL. Within the Study Area the community occurs along the north-facing slope above upper Diablo Creek. It has a continuous shrub canopy dominated by toyon (*Heteromeles arbutifolia*) and an understory dominated by poison oak. This habitat forms transitional areas with other shrublands and coast live oak woodland communities, often forming a variable and mixed shrub canopy that includes California coffeeberry, coyote brush, and California sagebrush. Emergent trees are present and include California bay and coast live oak. Toyon chaparral is not designated as a CDFW sensitive community (CDFW, 2022).

Other Land Cover Types

Developed. Developed areas in the Study Area include flood control facilities, roads/parking lots, DCPP, 230 kV and 500 kV lines, poles, and switchyards, and associated support structures. Vegetation types within these areas consists of non-native, ruderal vegetation.

Ruderal / Anthropogenic. This cover type is used to map the fragmented areas of vegetation bordering the developed portions of the Study Area. These areas are characterized by regular disturbance in the form of weed abatement (e.g., mowing, herbicide application) and vegetation suppression and contain a low cover of native or non-native plants. Species common to ruderal areas of the Study Area include sweet fennel, tocalote, red brome (*Bromus rubens*), and Russian thistle. Areas of ruderal vegetation do not correspond to a natural vegetation community.

3.3 Climate

The climate along the Central Coast is typically characterized as Mediterranean with mild year-round temperatures averaging 80 degrees in the dry summer months and 60 degrees in the moist winter months. The coastal influence of the Pacific Ocean moderates temperatures in the summer and winter and provides moisture in the form of coastal fog. The Study Area falls within the low-lying coastal zone which has smaller variations in temperatures on a daily and seasonal basis and is subject to an inversion layer that can trap cool moist air resulting in fog and low clouds in the early mornings and evenings. Rainfall is highly seasonal, with 80 percent of the average annual 17 inches of precipitation falling between December and April (San Luis Obispo, 2022).

3.4 Hydrology and Geomorphology

The Study Area is located within the Irish Hills Coastal Watershed (SLO Watershed Project, 2021). The Irish Hills Coastal Watershed drains 27,922 acres or approximately 44 square miles. The Irish Hills Coastal Watershed is in the San Luis Range, along the remote San Luis Obispo County coastline between the communities of Los Osos and Avila Beach. The drainages rise to a maximum elevation of 1,819 feet above MSL at Saddle Peak. The watershed is dominated by grazing lands, some of which are in conservation or agricultural easements, and public lands. The Central Coast Regional Water Quality Control Board (CCRWQCB) uses a watershed classification system that divides surface waters into hydrologic units (HUs). The Study Area is in the Estero Bay HU 10.

Diablo Creek is a single channel creek characterized by a narrow low-flow channel varying in depth from one to three feet, boarded by low a low terraces and deeply incised banks. Substrate in the channel varies from fine sized sediments (silt and clay) to coarse cobble and boulders (PG&E, 2020). Diablo Canyon Creek flows west out of the Irish Hills and passes through the DCPP site along the northern edge of the developed industrial areas. Above the switchyards, Diablo Creek enters an underground culvert (for approximately 2,714 linear feet) and flows beneath the 230 kilovolts (kV) and 500 kV switchyards northeast of Units 1 and 2 and drains directly into the Pacific Ocean and forms the western boundary of the DCPP (PG&E, 2021). Stormwater runoff flows to Diablo Creek or directly to the Pacific Ocean.

3.5 Soils and Geology

The DCPP site is in the Irish Hills in the southern part of the Coast Ranges Geomorphic Province of Central California. The Irish Hills lie west of the Santa Lucia Mountain range, a major topographic feature of the province. The Santa Lucia Mountains is approximately 140 miles long, extending from Monterey to Cuyama River, and approximately 20 to 25 miles wide and consists of Franciscan bedrock and Salinian

granitic basement rocks overlain by Cretaceous sedimentary sequences, Cenozoic sedimentary and volcanic rocks, and Quaternary sediments and volcanic deposits.

The Central Coast Ranges are a product of tectonic forces that continue to influence the geological and topographic development of the region, which has included folding, faulting, and uplift, which in turn has resulted in erosion and deposition of sediments in the Survey Area. The Survey Area is in a geologically complex and seismically active region which includes both the north-south trending Coast Ranges and the east-west Transverse Ranges. The seismicity of the Survey Area is dominated by the intersection of the north-northwest trending San Andreas and Coast Ranges faults and the east-west trending Transverse Ranges fault system. These systems are all responding to strain produced by the relative motions of the Pacific and North American Tectonic Plates. This strain is relieved by right-lateral strike-slip faulting on the San Andreas and related faults in the Coast Ranges and offshore, and by vertical, reverse-slip or left-lateral strike-slip displacement on faults in the Coast and Transverse Ranges. The effects of this strain and deformation includes mountain building, basin development, deformation of Quaternary marine terraces, widespread regional uplift, and generation of earthquakes. Both the Transverse Ranges and Coast Ranges areas are characterized by numerous geologically young faults (CGS, 2018).

Soils in the Study Area were dominated by a silty clay loam substrate resulting from the weathering of bedrock (see Table 4). Historic soil data (from 1984 to the present) from the Natural Resources Conservation Service (NRCS) were used to determine potential soil types, including where hydric soils have historically occurred in the Study Area (NRCS, 2022a). Figure 2 (Attachment 1) provides a graphical depiction of the location of historic soil types identified in the Study Area.

Table 4. Soil Units Occurring within the Survey Area (acres)

Map Unit Symbol	Map Unit Name	Description	Limits of Disturbance (Acres)	Survey Buffer (Acres)	Total Survey Area (Acres)
177	Nacimiento silty clay loam, 15 to 30 percent slopes	A well-drained soil that typically occurs along mountains and hills around 400 to 2,000 feet in elevation; parent material consists of residuum weathered from calcareous shale and/or sandstone; depth to water table > 80"; not prone to flooding or ponding; silty clay loam (0-39"), weathered bedrock (39-59").	2.40	2.35	4.74
178	Nacimiento silty clay loam, 30 to 50 percent slopes	A well-drained soil that typically occurs along mountain slopes and hillslope around 0 to 2,860 feet in elevation; parent material consists of residuum weathered from calcareous shale; depth to water table > 80"; not prone to flooding or ponding; silty clay loam (0-31"), bedrock (31-41").	23.20	26.77	49.97
179	Nacimiento silty clay loam, 15 to 75 percent slopes	A well-drained soil that typically occurs along mountain slopes and hillslope around 90 to 1,930 feet in elevation; parent material consists of fine-loamy residuum weathered from calcareous shale; depth to water table > 80"; not prone to flooding or ponding; silty clay loam (0-31"), bedrock (31-41").	1.61	3.71	5.32
182	Nacimiento-Calodo complex, 50 to 75 percent slopes	A well-drained soil that typically occurs along mountains and hills around 500 to 2,500 feet in elevation; parent material consists of residuum weathered from limestone; depth to water table > 80"; not prone to flooding or ponding; loam (0-16"), weathered bedrock (16-59").	2.36	4.23	6.59

Table 4. Soil Units Occurring within the Survey Area (acres)

Map Unit Symbol	Map Unit Name	Description	Limits of Disturbance (Acres)	Survey Buffer (Acres)	Total Survey Area (Acres)
203	Santa Lucia channery clay loam, 30 to 50 percent slopes	A well-drained soil that typically occurs along mountain slopes and hillslopes around 20 to 3,010 feet in elevation; parent material consists of shaly clayey residuum weathered from shale; depth to water table > 80"; not prone to flooding or ponding; channery clay loam (0-12"), very channery clay loam (12-24"), bedrock (24-34").	4.25	12.43	16.69
221	Xererts-Xerolls-Urban land complex, 0 to 15 percent slopes	A well-drained soil that typically occurs along mountains and hills around 0 to 2,500 feet in elevation; parent material consists of residuum weathered from mudstone, sandstone and/or shale; depth to water table > 80"; not prone to flooding or ponding; variable (0-60"), weathered bedrock (60-64").	68.02	41.02	109.03
		Total	**101.84**	**90.50**	**192.34**

4.0 Regulatory Background

Jurisdictional waters, including some wetlands and riparian habitats, are regulated by the USACE, the Regional Water Quality Control Board (RWQCB), and CDFW. The USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (33 U.S.C. 1344; CWA); the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

4.1 Section 404 of the Clean Water Act

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the U.S." (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." USACE has adopted several revisions to their regulations in order to more clearly define "waters of the U.S." Until the beginning of 2001, "waters of the U.S." included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable "waters of the U.S."

The jurisdictional extent of USACE regulation changed with the 2001 SWANCC (Solid Waste Agency of Northern Cook County) ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

In 2020, the U.S. Environmental Protection Agency (EPA) updated the CWA and their definition of navigable waters (USACE and EPA, 2020). The Navigable Waters Protection Rule regulates the nation's

navigable waters and the core tributary systems that provide perennial or intermittent flows into these systems. As such, "Waters of the U.S." encompass traditional navigable waters; perennial and intermittent tributaries that contribute surface waters flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters. Based on this ruling, ephemeral waters were not mapped as "Waters of the U.S." In 2021, the EPA and USACE were directed by the Biden Administration and the U.S. District Court to vacate the 2020 Navigable Waters Protection Rule and revert to the pre-2020 rule. This revision of the Waters of the U.S. rule meant that ephemeral drainages were once again being treated as Waters of the U.S.

On April 6, 2022, the U.S. Supreme Court issued a stay of the 2021 order by the U.S. District Court for the Northern District of California that vacated the EPA's 2020 Clean Water Act Section 401 Certification Rule. Therefore, the CWA section 401 certification process is once again governed by the CWA section 401 certification regulations promulgated by EPA in 2020 (40 CFR 121). On June 1, 2022, the EPA Administrator signed a proposed rule to improve the CWA section 401 certification process. The proposed rule would replace and update the existing regulations at 40 CFR 121, to be more consistent with the statutory text of the 1972 CWA and clarify elements of section 401 certification practice that has evolved over the 50 years since the 1971 regulation was promulgated. On June 9, 2022, the proposed rule was published in the Federal Register (EPA, 2022). Based on a high degree of uncertainly and on-going changes in policy, ephemeral drainages are treated as jurisdictional Waters of the U.S. in this report.

4.2 Porter Cologne Water Quality Control Act and Section 401 of the Clean Water Act

The RWQCBs regulate activities affecting 'waters of the State' according to the Porter-Cologne Water Quality Control Act and Section 401 of the federal CWA. The Porter-Cologne Act defines waters of the State as all surface and subsurface waters. The RWQCBs may issue permits (called Waste Discharge Requirements or WDRs) or may issue a waiver for a given application. In addition, the RWQCB recently started to implement a new regulatory program for all waters of the State. For non-wetland waters of the State, RWQCB procedures and guidelines recognize the ordinary high-water mark (OHWM) as defined by federal guidelines (SWRCB, 2022; see also USACE, 2008) as the limits of jurisdiction. However, waters of the State include isolated waters and need not have downstream surface connection to federally jurisdictional waters. The new program uses the soils, hydrology, and vegetation criteria to identify wetlands, but may define certain unvegetated sites (e.g., mud flats or playas) as wetlands based on only the soils and hydrology criteria. The Survey Area is within the jurisdictional boundaries of the Central Coast RWQCB.

Section 401 of the CWA requires that:

> *…any applicant for a Federal permit for activities that involve a discharge to "waters of the State," shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act.*

Therefore, before the USACE may issue a Section 404 permit, a permittee must apply for and receive a Section 401 Water Quality Certification from the RQWCB, Central Coast Region. The RWQCB may add conditions to their certification to remove or mitigate potential impacts to water quality standards.

On April 2, 2019, the State Water Resources Control Board (State Water Board) adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The adopted

definitions and procedure allow for the presence of hydric substrates as a criterion for wetland identification (not just wetland soils) and wetland hydrology for an area devoid of vegetation (less than 5% cover) to be considered a wetland. Waters of the State were delineated based on the OHWM in the field.

4.3 Coastal Commission Wetlands

As discussed above, the USACE generally uses a three-parameter definition for delineating wetland Waters of the U.S. as discussed in the USACE Wetland Delineation Manual (USACE, 1987). These three parameters include a positive indicator of hydrophytic vegetation, hydric soils, and wetland hydrology. In contrast, the CCC utilizes a one parameter definition of wetlands that only requires evidence of a single parameter to establish wetland conditions (California Code of Regulations Title 14 (14 CCR)).

4.4 Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires any person, State or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that will take place in a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. CDFW may also exert jurisdiction over storm drains or concrete channels that convey flows from one jurisdictional feature to another. Based on the notification materials submitted, the CDFW will determine if the proposed project may impact fish or wildlife resources.

If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed CEQA document must be submitted to CDFW before a SAA will be issued.

5.0 Waters and Wetlands Delineation Methodology

This section describes the methods employed to determine the extent of potentially jurisdictional wetlands and/or waters that occur in the Study Area. Prior to conducting the field assessment, Aspen reviewed current and historic aerial photographs; detailed topographic maps (1-foot intervals); the Soil survey of San Luis Obispo County, California, coastal part Soil Survey; and the local and State hydric soil list to evaluate the potential active channels and wetland features that occur in the Study Area (NRCS 2022a, 2022b). During the field assessment, vegetation, hydrology, and locations of soil test pits were mapped using an Apple iPad paired with an Arrow GPS unit and identified on aerial photographs (Figure 4, Attachment 1). Field maps were digitized using Global Information Technology (GIS) and total jurisdictional area for each jurisdiction was calculated. All drainages were assigned a number to identify the feature and (b) was assigned to those drainages within the Survey Area buffer while (a) was assigned to drainage segment within the limits of disturbance.

5.1 Wetland Waters of the U.S.

Jurisdictional wetlands were delineated using a routine determination according to the methods outlined in the USACE Wetland Delineation Manual (USACE, 1987) and the Arid West Supplement (USACE, 2008) based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. In addition, areas that fell outside the established transects but that had standing water and wetland hydrology and were dominated by obligate plants were mapped as wetlands without soils being sampled.

5.1.1 Wetland Vegetation

Percent cover of vegetation was visually estimated at each soil test pit. Plant species in each stratum (tree, sapling/shrub, herb, and woody vine) were ranked according to their canopy dominance (USACE, 2008). Species that contributed to a cumulative coverage total of at least 50 percent and any species that comprised at least 20 percent of the total coverage for each stratum were recorded on the Field Data Sheets (50/20 Rule). Wetland indicator status was assigned to each dominant species using the Arid West 2016 Regional Wetland Plant List (USACE, 2016) and Wetland Plants of Specialized Habitats in the Arid West (USACE, 2007). If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criterion for wetland vegetation was met (refer to Table 3, Attachment 3).

5.1.2 Wetland Hydrology

The presence of wetland hydrology was evaluated by recording the extent of observed primary and secondary indicators, as listed in Tables 4 and 5 of Attachment 3 (USACE, 2008). The Arid West Supplement includes two additional indicator groups that can be utilized during dry conditions or in areas where surface water/saturated soils are not present; these are Group B (evidence of recent inundation) and Group C (evidence of recent soil saturation) (USACE, 2008). The indicators are divided into two categories (primary and secondary indicators) and presence of one primary indicator from any of the groups is considered evidence of wetland hydrology. If only secondary indicators are present, two or more must be observed to conclude presence of wetland hydrology. Indicators are intended to be one-time observations of site conditions representing evidence of wetland hydrology when hydrophytic vegetation and hydric soils are present (USACE, 2008).

5.1.3 Wetland Soils

A single soil pit was excavated in the portion of the Survey Area with evidence of hydrology and hydrophytic vegetation. A soil pit was dug to a depth of 20 inches where possible (USACE, 2008). At the soil pit, the soil texture and color were recorded by comparison with standard plates within a Munsell soil color chart (Munsell Color, 2009). Any other indicators of hydric soils, such as redoximorphic features, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils were also recorded (refer to Tables 6 – 7, Attachment 3).

5.2 Non-wetland Waters of the U.S.

Jurisdictional non-wetland “waters of the U.S.” were delineated based on the limits of the ordinary high-water mark (OHWM) as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetative characteristics. Outside of the riparian and estuarine system on the coast, the OHWM was a determined at the average high tide line. Tables 1 – 2 in Attachment

3 (Potential Geomorphic and Vegetative Indicators of Ordinary High-Water Marks for the Arid West) list key physical features for determining the OHWM identified by the Arid West Supplement.

Pursuant to the USACE Wetland Delineation Manual (USACE, 1987) and the Arid West Supplement (USACE, 2008), wetland areas within the Study Area may be considered a problematic, due to the changes in topography and the altering of run-off from the Study Area and adjacent upland areas. This may result in limited or no access to hydric indicators within the soils during the delineation throughout the Study Area. Although these conditions could complicate the delineation, the 2008 Arid West Supplement (USACE, 2008) provides guidance for atypical and problematic conditions. Aspen also reviewed the (NRCS, 2022a) to identify historic soil types for the Study Area. Data on vegetation, hydrology, and soils were collected using the methods described in Sections 4.1.1 through 4.1.3 and recorded on Wetland Determination Data Forms (Attachment 4).

5.3 RWQCB Wetlands and Waters of the State

RWQCB waters of the state generally match the limits of the waters of the U.S. described above. The RWQCB waters of the state are generally delineated based on the limits of the OHWM as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetative characteristics. In some locations where waters of the U.S. are absent, the limits of RWQCB jurisdiction match the top of bank, as described below for CDFW jurisdiction. The CCRWQCB is the state agency responsible throughout the Survey Area.

RWQCB wetlands of the State are generally mapped based on the presence of three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. The methods used match those described above for Wetland Waters of the U.S.

5.4 California Coastal Commission Wetlands

CCC jurisdiction occurs in coastal areas approximately 1,000 yards inland and three miles seaward. CCC delineates wetlands using a one parameter definition of wetlands. Three parameters (hydrophytic vegetation, wetland hydrology, and hydric soils) were evaluated within the wetlands in the Survey Area using the methods outlined in the USACE Wetland Delineation Manual (USACE, 1987) and the Arid West Supplement (USACE, 2008) as described above in Section 4.1. For any drainage within the Survey Area that contained at least one of these wetland parameters, CCC jurisdictional wetlands were identified.

5.5 CDFW Jurisdictional Waters

CDFW jurisdiction was delineated to the top of the banks of the channel and/or to the edge of the riparian canopy/riparian habitat where the trees and vegetation are rooted within the bank. Coastal bluffs were mapped to the top of the unvegetated bluff, which was representative of the top of bank. Other marine areas were mapped at the clearest transition between the marine environment and the adjacent upland or developed area. For portions of the Study Area, the CDFW jurisdictional boundary is concurrent with the OHWM. In some areas, the riparian canopy/riparian habitat extends beyond the OHWM. Therefore, the total acreage of CDFW jurisdictional waters is greater than the combined acreage of federal jurisdictional waters/wetlands.

6.0 Results

Four categories of jurisdictional features were documented within the Survey Area: USACE Waters of the U.S., CCRWQCB Waters of the State, CCC Wetlands, and CDFW jurisdictional streambeds and vegetation

(refer to Tables 5 and 6 below; Figure 4, Attachment 1). Table 4-1 and Figure 4 (Attachment 1) show locations and acreages of jurisdictional features in the Study Area. Attachment 4 contains the Wetland Determination Data Forms completed during the assessment. According to the NRCS Hydric Soils List (NRCS 2022a, 2022b), Xererts-Xerolls-Urban land complex, 0 to 15 percent slopes is considered a hydric soil. There are no additional mapped hydric soils in the Study Area.

Table 5. Summary of Jurisdictional Resources Within the Survey Area

	USACE Waters and Wetlands (Acres)[1]		CCRQWCB Waters and Wetlands (Acres)[1]		CCC Wetland (Acres)	CDFW Streambeds (Acres)
	Non-wetland Waters of U.S.	Wetlands	Non-wetland Waters of State	Wetlands		
Limits of Disturbance (Temporary Impact Area)	0.79	--	1.07	--	--	1.17
Survey Buffer (Indirect Impact Area)	1.99	--	2.29	--	0.01	4.52
Total Survey Area	2.78	--	3.36	--	0.01	5.69

[1] Non-wetland Waters of the United States and Non-wetland Waters of the State overlap; as such, jurisdictional acreages are not additive.

- **Drainages 1-4, 7-12, 14-16, 25** – These drainages are primarily upland ephemeral swales, earthen roadside ditches, and other erosional features. These drainages are likely to fall under the jurisdiction of the CCRWQCB and CDFW. They all convey flows downstream or downslope but lack any evidence of an OHWM and are therefore not anticipated to be USACE Waters of the U.S. These features are primarily located in developed areas and in upland vegetation such as coast live oak woodland and wild oats and annual brome grassland. These drainages are not mapped in the National Wetland Inventory (USFWS, 2022).

- **Drainages 11, 13, and 19** – These drainages make up portion of Diablo Creek that flow westward through the Survey Area. Diablo Creek is a perennial stream with downstream connectivity to the Pacific Ocean. It is occupied by steelhead and potentially other fish species and supports a broad riparian corridor dominated by coast live oak, arroyo willow, and big-leaf maple. Wetland hydrology, hydric soils, and hydrophytic vegetation are expected to be present but are entirely within the OHWM and therefore not mapped as wetlands. These drainages are mapped as freshwater forested/shrub wetland (PFO/SSC) and riverine (R3UBH) in the National Wetland Inventory (USFWS, 2022).

- **Drainages 5 and 6** – These two features form a single upland ephemeral drainage that crosses an existing access road near the proposed borrow site. The vegetation along these drainages is dominated by coast live oak and coyote brush. These drainages lack a clearly defined OHWM and do not have connectivity to downstream jurisdictional features or the Pacific Ocean. For this reason, they are likely to fall under the jurisdiction of the CCRWQCB and CDFW but are not expected to fall under the jurisdiction of the USACE. These drainages are not mapped in the National Wetland Inventory (USFWS, 2022).

Table 6. Acreage of Jurisdictional Wetlands, Waters, and Streambeds

		Limits of Disturbance (Temporary Impacts)						Survey Buffer (Indirect Impacts)						
		CCRWQCB Waters of the State/CDFW Streambeds		CDFW Streambeds		USACE Waters of the U.S.		CCRWQCB Waters of the State/CDFW Streambeds		CDFW Streambeds		USACE Waters of the U.S.		CCC Wetlands
Drainage ID[1]	Dominate Vegetation Type[2]	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Area (sqft)
1a	WOABG	128	127.62											
1b	WOABG							31	31.28					
2a	DEV	154	153.62											
2b	WOABG							34	33.88					
3a	DEV	114	113.71											
4a	DEV	309	308.36											
5a	DEV	50	56.96											
5b	CSS							225	346.36					
6a	WOABG	7	6.45											
6b	WOABG							35	35.42					
7a	DEV	29	29.32											
7b	CSS							19	19.21					
8a	CLOW	11	11.10											
8b	CLOW							265	264.32					
9b	CLOW							172	171.77					
10b	CLOW							87	514.15					
11a	DEV	25	48.46											
11b	CLOW							165	327.72					
12b	CLOW							13	13.18					
13b	CLOW							168	3871.49					
14b	CLOW							99	98.45					
15a	WOABG	230	229.08											
16a	WOABG	380	378.43											
17b	CSS									136	1200.78	37	480.70	
18b	RUD							138	135.08					
19a	DEV			20	213.57	2	71.73							
19b	AWT									1025	54458.55	276	11641.71	
20a	OW			125	38350.34	38	34354.30							

Table 6. Acreage of Jurisdictional Wetlands, Waters, and Streambeds

		Limits of Disturbance (Temporary Impacts)						Survey Buffer (Indirect Impacts)						
		CCRWQCB Waters of the State/CDFW Streambeds		CDFW Streambeds		USACE Waters of the U.S.		CCRWQCB Waters of the State/CDFW Streambeds		CDFW Streambeds		USACE Waters of the U.S.		CCC Wetlands
Drainage ID[1]	Dominate Vegetation Type[2]	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Length (ft)	Area (sqft)	Area (sqft)
20b	CBS									1216	90726.57	203	59089.89	
21b	CBS									202	3873.20			
22b	DEV									264	11487.83	79	9021.26	
23b	CSS									10	623.39	3	46.48	
24b	CSS									43	87.35	13	43.22	
25b	CSS									109	1496.93	12	669.29	397.89
26b	CSS									759	18398.60	94	5543.69	
27b	CSS							63	1743.02					
28a	DEV	947	4619.12											
28b	CSS							655	5206.67					
29a	DEV	1053	6335.83	5	53.20	2	5.33							
29b	WOABG									190	1899.01	58	190.01	
Project Totals:		**3437**	**12418.06**	**151**	**38617.10**	**42**	**34431.35**	**2171**	**12812.01**	**3955**	**184252.21**	**775**	**86726.26**	**397.89**

Notes:

[1] The letter "a" indicated temporary impacts and the letter "b" indicated indirect impacts.

[2] AWT=Arroyo willow thicket, CBS = Coastal bluff scrub, CSS = California sagebrush scrub, CLOW=Coast live oak woodland, DEV=Developed, OW=Open water, RUD=Ruderal, WOABG=Wild Oats and Annual Brome Grassland.

- **Drainage 20-22, 26, 27** – These drainages include the Pacific Ocean, intertidal areas, and a portion of the marina. These drainages are all expected to fall under the jurisdiction of the USACE, CCRWQCB, CCC, and CDFW. They are all subject to tidal shifts and have clearly defined OHWM. The majority of these features are within the Survey Area but are not expected to be impacted. These drainages are mapped as estuarine and marine deepwater (M1UBL) and estuarine and marine wetland (M2RSN) in the National Wetland Inventory (USFWS, 2022).

- **Drainage 25** – This drainage is a recently formed wetland, adjacent to the marina. The wetland is dominated by tall cyperus (*Cyperus eragrostis*). The wetland does not have hydric soils present, likely because it was recently formed by a nearby leaking pipe. This wetland is likely to fall under the jurisdiction of the CCRWQCB, CCC, and CDFW. Three parameter wetlands are not present, and the wetlands therefore do not fall under the jurisdiction of the USACE. However, this drainage does have a clearly defined OHWM that is well above the limits of the wetland vegetation. Flows from this drainage must accumulate to a depth of approximately 2 feet before flows spill into a drainage pipe that leads to the Pacific Ocean. These drainages are not mapped in the National Wetland Inventory (USFWS, 2022).

- **Drainage 24** – Is a small ephemeral drainage that flows into drainage 25, described above. Until recently, this drainage only flowed during rainfall events. More recently, a broken or leaking pipe in the drainage has begun to release perennial water into the drainage which is feeding the downstream wetland. It is unclear if repairs to this pipe are planned. Vegetation surrounding the drainage is primarily coastal sage scrub, but some wetland species are beginning to show up along the flow path of the water. These drainages are not mapped in the National Wetland Inventory (USFWS, 2022).

- **Drainage 28** – This drainage is an ephemeral channel that flows west through an old leach field, enters the existing storm drain system, and eventually reaches the Pacific Ocean. It is located entirely within wild oats and annual brome grassland. This drainage is likely to fall under the jurisdiction of the CCRWQCB and CDFW but not the USACE because it lacks an OHWM. This drainage is not mapped in the National Wetland Inventory (USFWS, 2022).

- **Drainage 29** – This drainage is an ephemeral channel that is located in the southern portion of the Survey Area. It originates in the hills to the east of the Survey Area and enters a storm drain near the edge of the limits of disturbance. The drainage has evidence of an OHWM which has been largely tramped by cattle. The drainage is likely to fall under the jurisdiction of the USACE, CCRWQCB, and CDFW. This drainage is not mapped in the National Wetland Inventory (USFWS, 2022).

6.1 Wetland Waters of the U.S.

Based on the field assessment, including the wetland sample locations, no federal wetlands were determined to be present within the Survey Area (see Figure 4, Attachment 1). Wetland hydrology and hydrophytic vegetation are present in drainage 25 however hydric soils were not present. Regardless, the wetlands in drainage 25 are within the OHWM and would therefore not be considered wetland Waters of the U.S., even if soils were present. The Wetland Determination Data Form is included in Attachment 4.

6.2 Non-wetland Waters of the U.S.

Approximately 2.78 acres of the Survey Area meet the definition of “waters of the United States” as outlined in 33 CFR Part 328 (Figure 4, Attachment 1). Of these, approximately 0.79 acres are within the

limits of disturbance and may be temporary impacted. The remaining 1.99 acres are within the Survey Area buffer and are not expected to be directly impacted. This assessment is based on Aspen's professional opinion following an assessment of hydrology and the limits of the OHWM as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetation and soils characteristics noted during the field surveys. Some of the key hydrology indicators (see Tables 1 – 2 in Attachment 3 for additional information) that were noted during the delineation included:

- A11 – Scour holes downstream of obstructions
- A16 – Desiccation/med cracks
- B3 – Benches
- B6 – Break in bank slope
- B8 – Change in particle size distribution
- B10 – Exposed root hairs below intact soil layer
- B11 – Silt deposits
- B12 – Litter (organic debris, small twigs and leaves)
- B13 – Drift (organic debris, larger than twigs)
- C8 – Soil development

6.3 RWQCB Waters of the State

Based on this assessment of OHWMs and Aspen's professional opinion, 3.36 acres of the Survey Area meet the definition of non-wetland Waters of the State (Tables 5 and 6 and Figure 4 of Attachment 1). Of these, approximately 1.07 acres are within the limits of disturbance and may be temporary impacted. The remaining 2.29 acres are within the Survey Area buffer and are not expected to be directly impacted. Most of these drainages within the Survey Area are not Waters of the U.S. and fall under the jurisdiction of the CCRWQCB via the Porter Cologne Water Quality Control Act.

6.4 RWQCB Wetlands of the State

Based on this assessment and Aspen's professional opinion, no Wetlands of the State were determined to be present within the Survey Area (see Figure 4, Attachment 1). Wetland hydrology and hydrophytic vegetation are present in drainage 25 however hydric soils were not present. Regardless, the wetlands in drainage 25 are within the OHWM and would therefore not be considered Wetland Waters of the U.S. or Wetlands of the State, even if soils were present. The Wetland Determination Data Form is included in Attachment 4.

6.5 Coastal Commission Wetlands

Based on the assessment of hydrology, vegetation, and soils, and Aspen's professional opinion, approximately 0.01 acres of the Survey Area satisfy the CCC criteria as wetlands. None of the CCC jurisdictional wetlands are within the limits of disturbance. Additional information can be found above in Section 6.1 and on the field data sheet (Attachment 4).

6.6 CDFW Jurisdictional Waters

Based on Aspen's professional opinion following an assessment of hydrology, presence of bed and bank, and extent of riparian vegetation, approximately 5.69 acres of the Survey Area meet the definition of CDFW jurisdictional streambeds as outlined in Sections 1600-1616 of the CDFW Code (Figure 4, Attachment 1). This also includes two concrete-lined channels that convey flows from drainages 28 and 29, offsite to the Pacific Ocean. Of these, approximately 1.17 acres are within the limits of disturbance and may be temporary impacted. The remaining 4.52 acres are within the Survey Area buffer and are not expected to be directly impacted. CDFW jurisdiction encompassed all areas of open water, wetlands, streambeds, channels, erosional features, and immediately adjacent riparian vegetation.

7.0 Summary and Conclusions

The Survey Area includes USACE Waters of the U.S., CCRWQCB Waters of the State, CCC Wetlands, and CDFW jurisdictional waters and vegetation. Acreages of each jurisdiction are listed below and discussed above:

- 2.78 acres of jurisdictional non-wetland Waters of the U.S. were mapped in portions of the Survey Area that a discernible OHWM. Of these, approximately 0.79 acres are expected to be impacted as a result of the Project.
- 3.36 acres of non-wetland Waters of the State were mapped within the Survey Area. Of these, 1.07 acres are expected to be impacted as a result of the Project.
- 0.01 acres of CCC wetland were mapped within the Survey Area. These wetlands are not expected to be impacted as a result of the Project.
- 5.69 acres of CDFW jurisdictional streambeds and vegetation were mapped based on the presence of clearly defined bed and banks and other field observations. Of these, approximately 1.17 acres are expected to be impacted as a result of the Project.

The conclusions presented above represent Aspen's professional opinion based on our knowledge and experience with the USACE, CCRWQCB, and CDFW, including the applicable regulatory guidance documents and manuals. However, the USACE, CCRWQCB, and CDFW have final authority in determining the status and presence of jurisdictional wetlands and waters and the extent of their boundaries.

8.0. Literature Cited

CDFW (California Department of Fish and Wildlife). 2022. California Sensitive Natural Communities. Accessed July 2022. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline.

CGS (California Geological Survey). 2018. Fault Rupture Hazard Zones in California, CGS Special Publication #42. pp. 27-28.

EPA (US Environmental Protection Agency). 2022. Clean Water Act Section 401 Water Quality Certification Improvement Rule; Proposed Rule. Federal Register 87:35318-35381 (June 9).

Munsell Color. 2009 Revised Edition. *Soil Color Charts.* GretagMacbeth. New York.

NRCS (Natural Resource Conservation Service). 2022a. Web Soil Survey 2.0. Accessed July 2022. http://websoilsurvey.nrcs.usda.gov/.

_____. 2022b. National Hydric Soil List by State. Accessed July 2022. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html.

PG&E (Pacific Gas & Electric Company). 2021. Diablo Canyon Decommissioning, Water Resources Evaluation and Future Source Water Supply. Prepared by ERM. May. pp. 8-9, 20-24.

Reed, Porter B. Jr. 1988. National List of Plant Species That Occur in Wetlands: California (Region 0). U.S. Fish and Wildlife Service, National Ecology Research Center, St. Petersburg, FL.

Sawyer, John O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation; 2nd Edition. California Native Plant Society, Sacramento, California.

San Luis Obispo (County of San Luis Obispo). 2022. San Luis Obispo County Public Works, Recording Rain Station Monthly Precipitation Report. Station Name: Davis Peak #738. Accessed September 2022. https://www.slocounty.ca.gov/getattachment/1ce19197-fa40-410a-8704-fdb08166558b/Davis-Peak-Precipitation-Data-Site-738.aspx

SLO Watershed Project. 2022. SLO Watershed Project, Watershed Maps and Data for San Luis Obispo County. Accessed September 2022. http://slowatershedproject.org/.

SWRCB (State Water Resources Control Board). 2022. State Water Resources Control Board Resolution No. 2021-0012. Accessed September 2022. https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp/rs2021_0012.pdf.

PG&E. 2020. Diablo Canyon Decommissioning Terrestrial Biological Resources Assessment. Prepared for Pacific Gas & Electric Company.

USGS (United States Geological Survey). 2018. Port San Luis, California 7.5-minute Topographic Quadrangle.

USACE (U.S. Army Corps of Engineers). 1987. USACE of Engineers Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, MS.

_____. 2007. Wetland Plants of Specialized Habitats in the Arid West. Robert Lichvar and Lindsey Dixon. ERDC/CRREL TR-07-8. Hanover, NH: Cold Regions Research and Engineering Laboratory.

_____. 2008. Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2016. Arid West 2016 Regional Wetland Plant List. ed. R. W. Lichvar. ERDC/CRREL. Hanover, NH: Cold Regions Research and Engineering Laboratory.

USACE and EPA. (US Army Corps of Engineers and US Environmental Protection Agency). 2020. The Navigable Waters Protection Rule: Definition of "Waters of the United States." Final rule, prepublication copy issued January 23, 2020, pending publication in Federal Register.

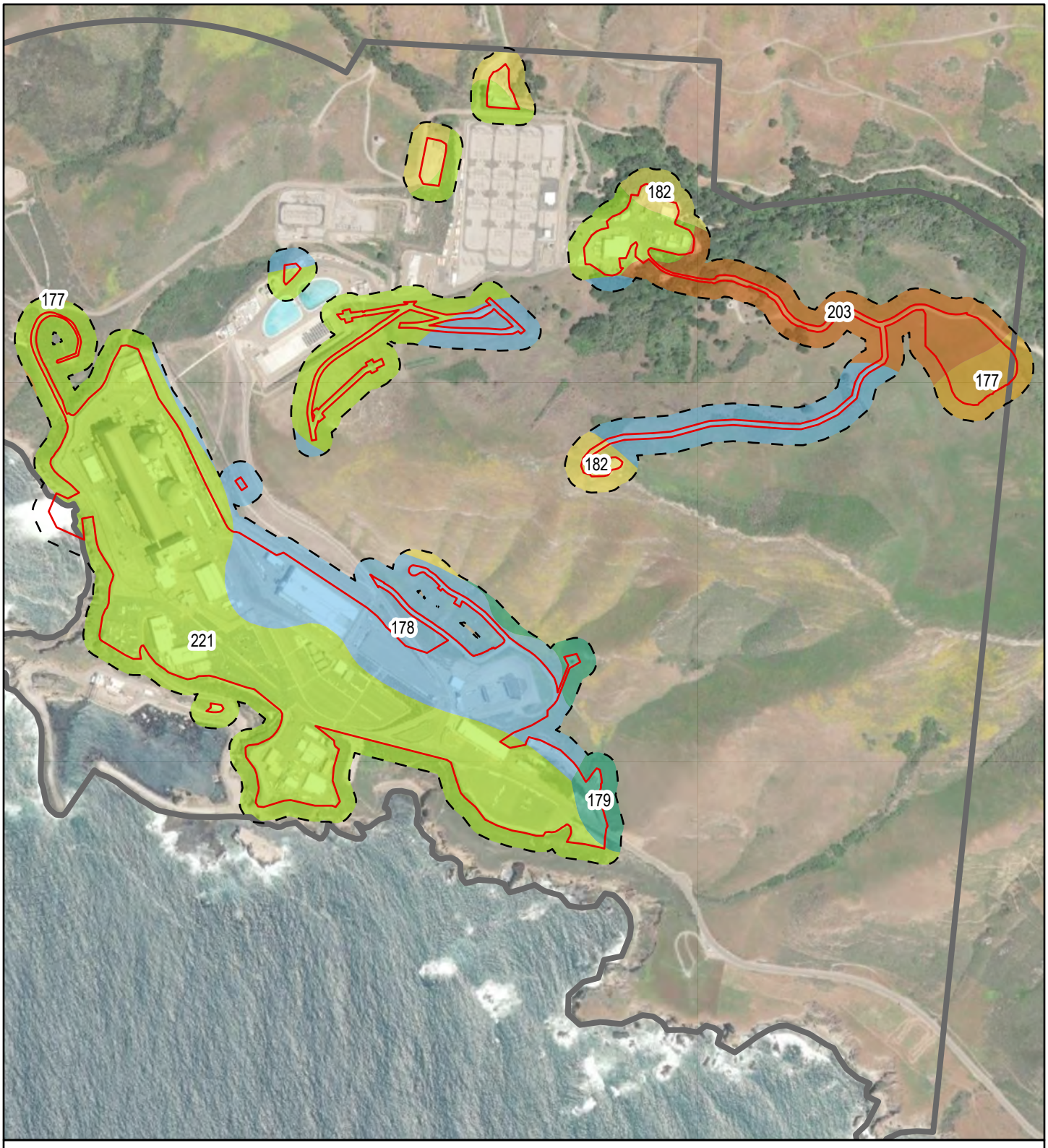
USFWS (United States Fish and Wildlife Service). 2022. National Wetland Inventory. Accessed September 2022. https://www.fws.gov/wetlands/data/Mapper.html

Attachment 1 – Figures

Figure 1

Project Overview

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.



Diablo Canyon Power Plant (DCPP)
Limits of Disturbance (LOD)
Survey Buffer
177: Nacimiento silty clay loam, 15 to 30 percent slopes
179: Nacimiento silty clay loam, 15 to 75 percent slopes, MLRA 15
178: Nacimiento silty clay loam, 30 to 50 percent slopes, MLRA 15
182: Nacimiento-Calodo complex, 50 to 75 percent slopes
203: Santa Lucia channery clay loam, 30 to 50 percent slopes, MLRA 15
221: Xererts-Xwerlls-Urban land complex, 0 to 15 percent slopes

0 1,000 2,000 Feet

Figure 2

Soils

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022; USGS, 2022.

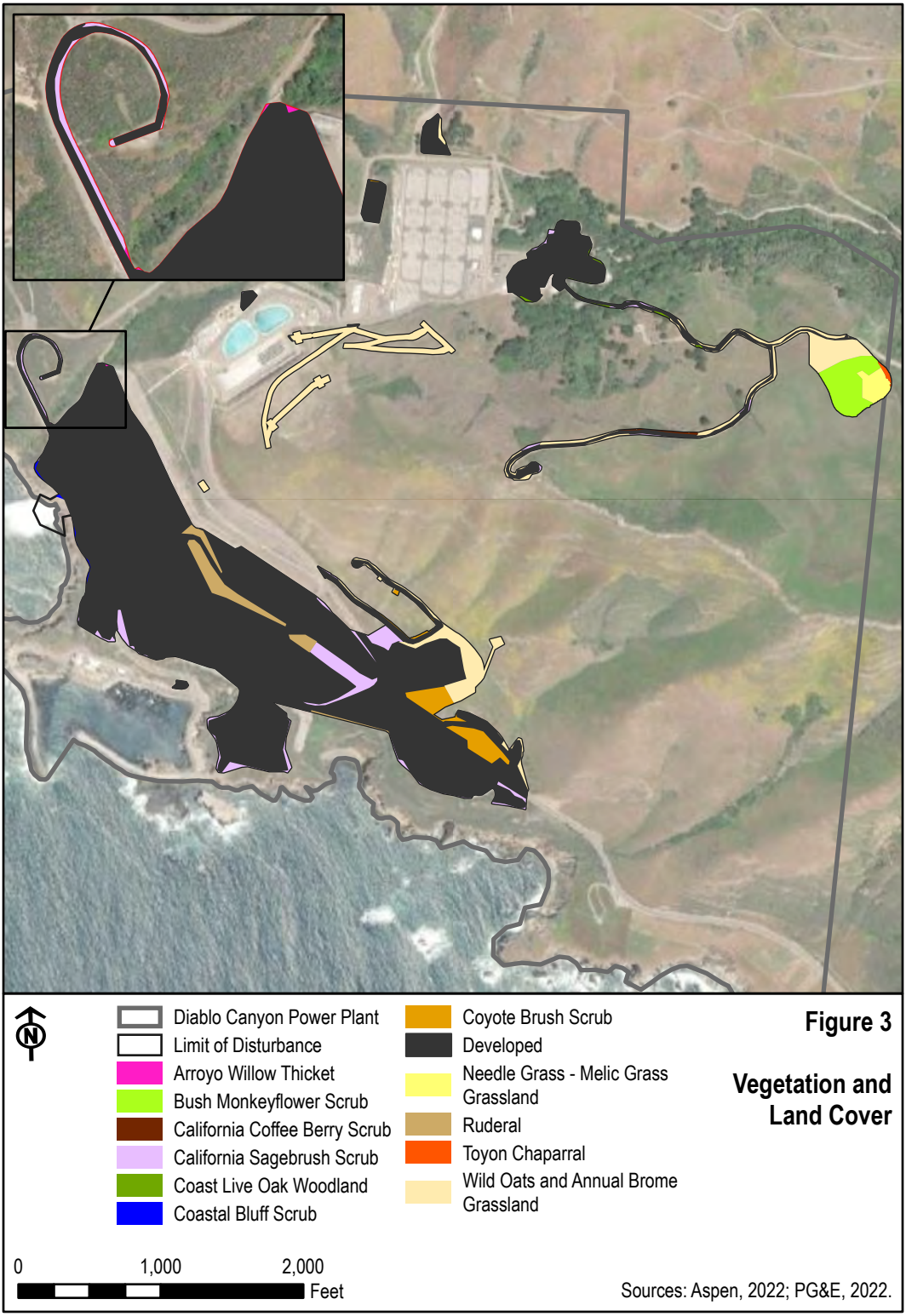


Figure 3

Vegetation and Land Cover

Sources: Aspen, 2022; PG&E, 2022.

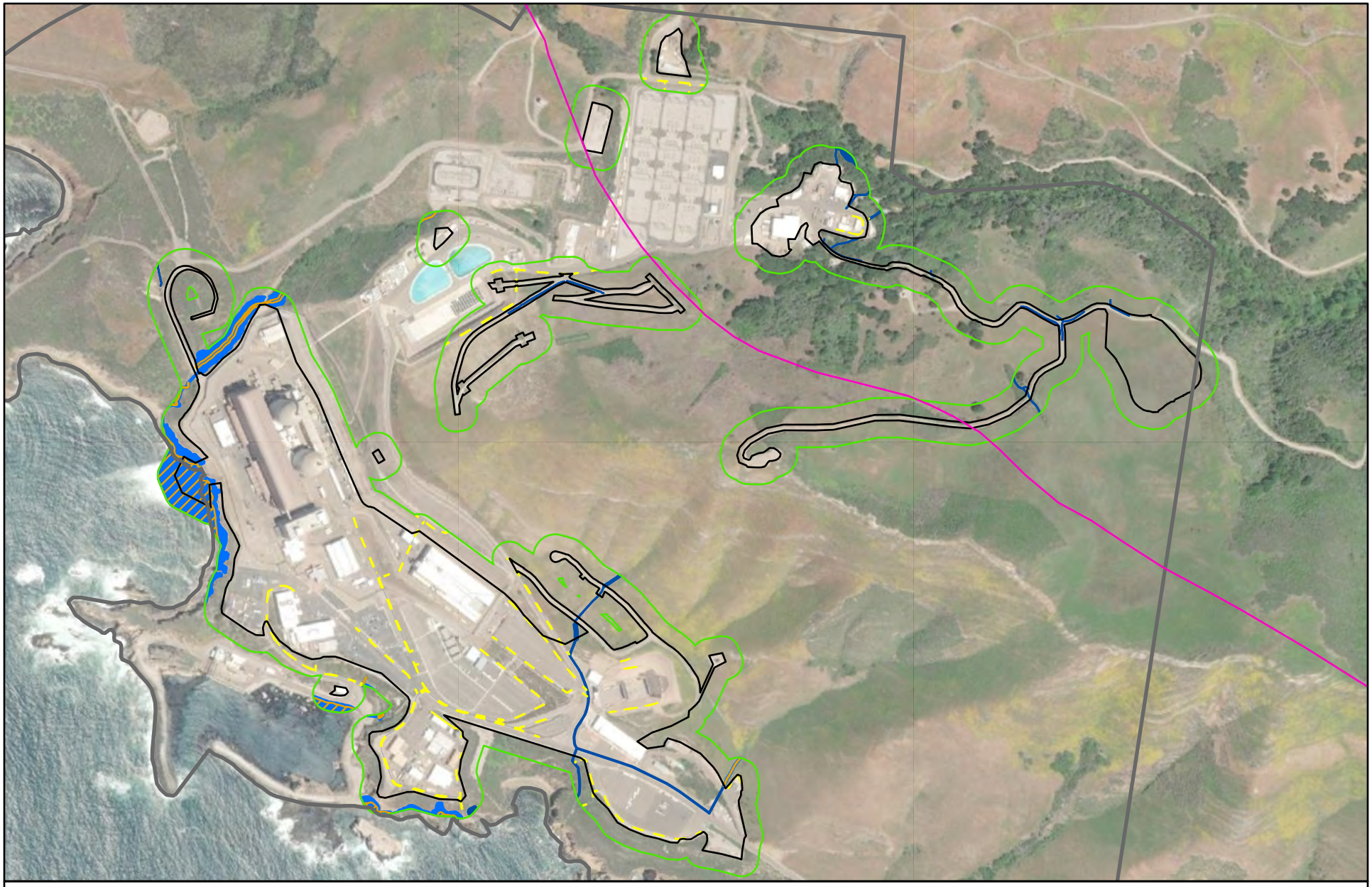
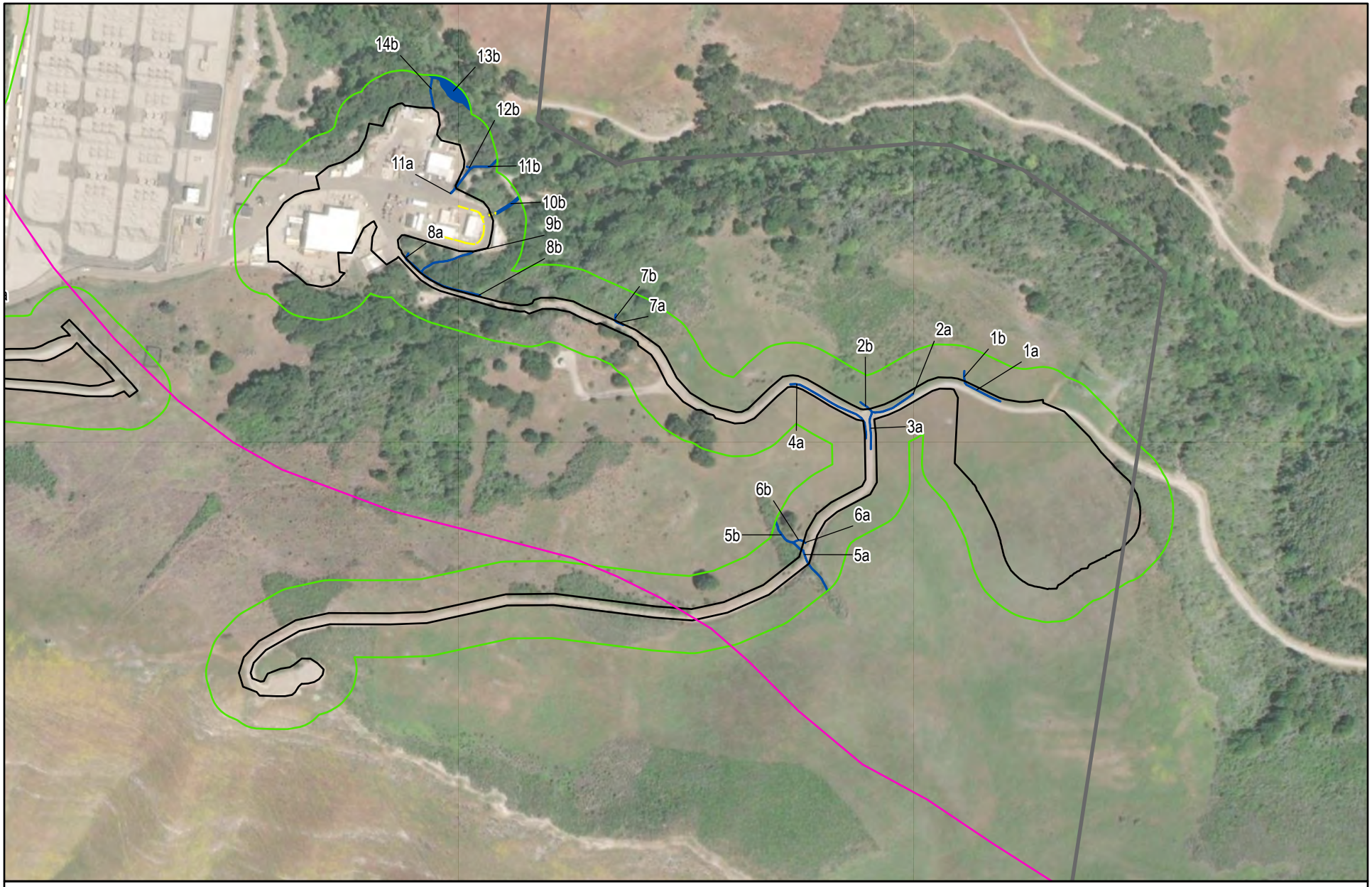


Figure 4

Jurisdictional Waters and Wetlands

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.



* Drainage ID's succeeded by "a" are found within the LOD. Drainage ID's succeeded by "b" are found within the Survey Buffer.

Figure 4a

Jurisdictional Waters and Wetlands

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.

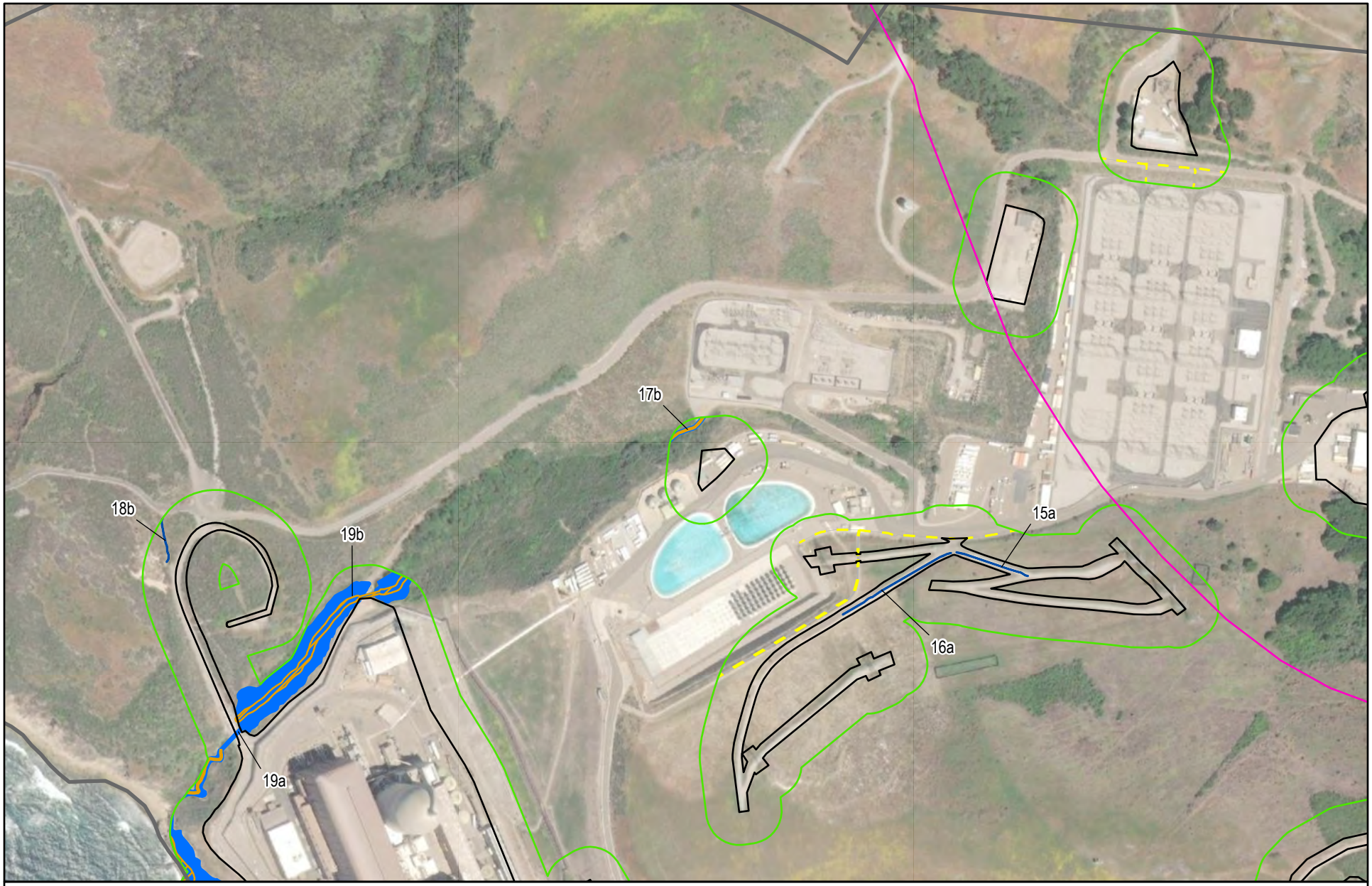


Figure 4b

Jurisdictional Waters and Wetlands

* Drainage ID's succeeded by "a" are found within the LOD. Drainage ID's succeeded by "b" are found within the Survey Buffer.

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.

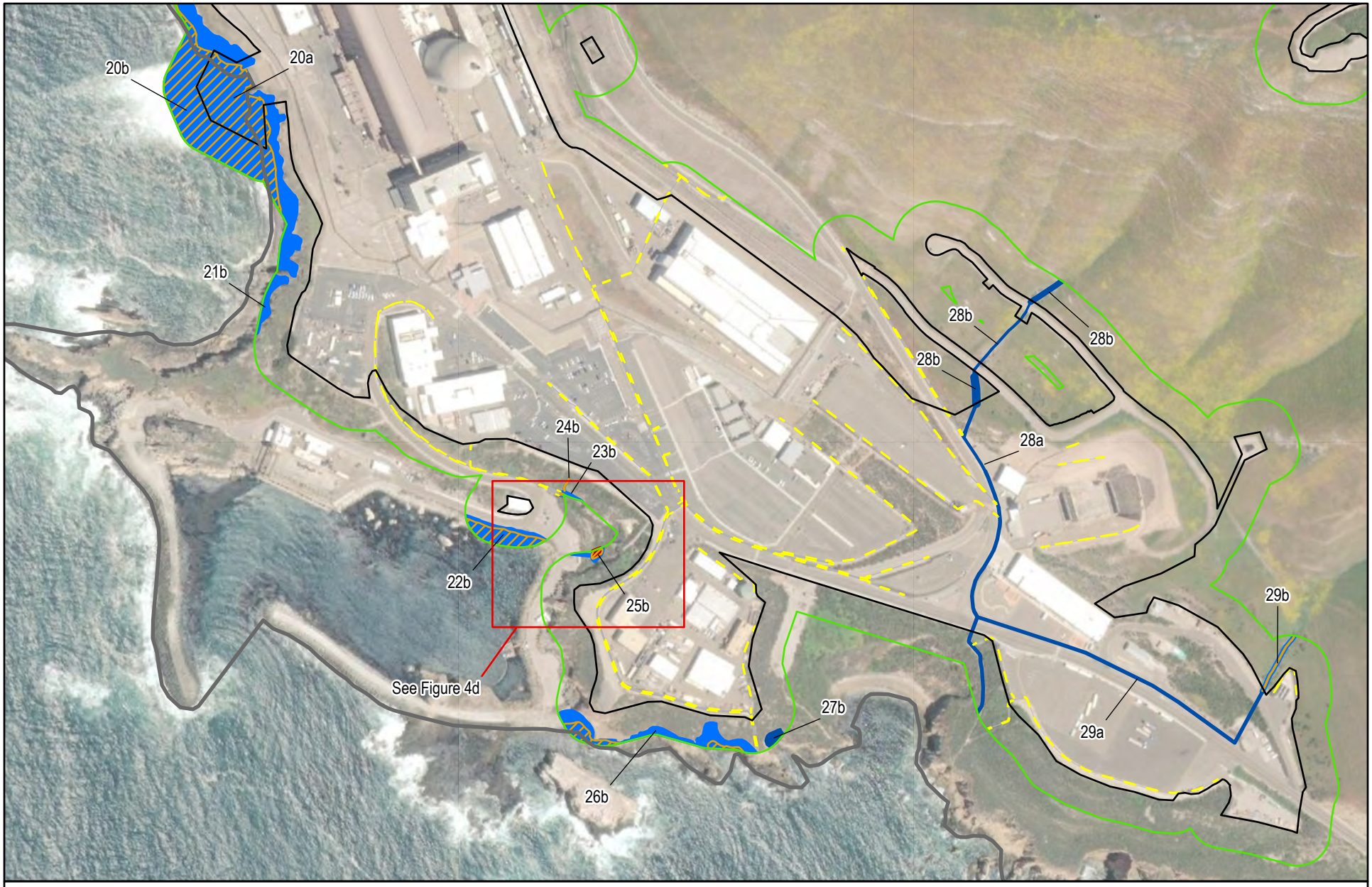


Figure 4c

Jurisdictional Waters and Wetlands

* Drainage ID's succeeded by "a" are found within the LOD. Drainage ID's succeeded by "b" are found within the Survey Buffer.

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.

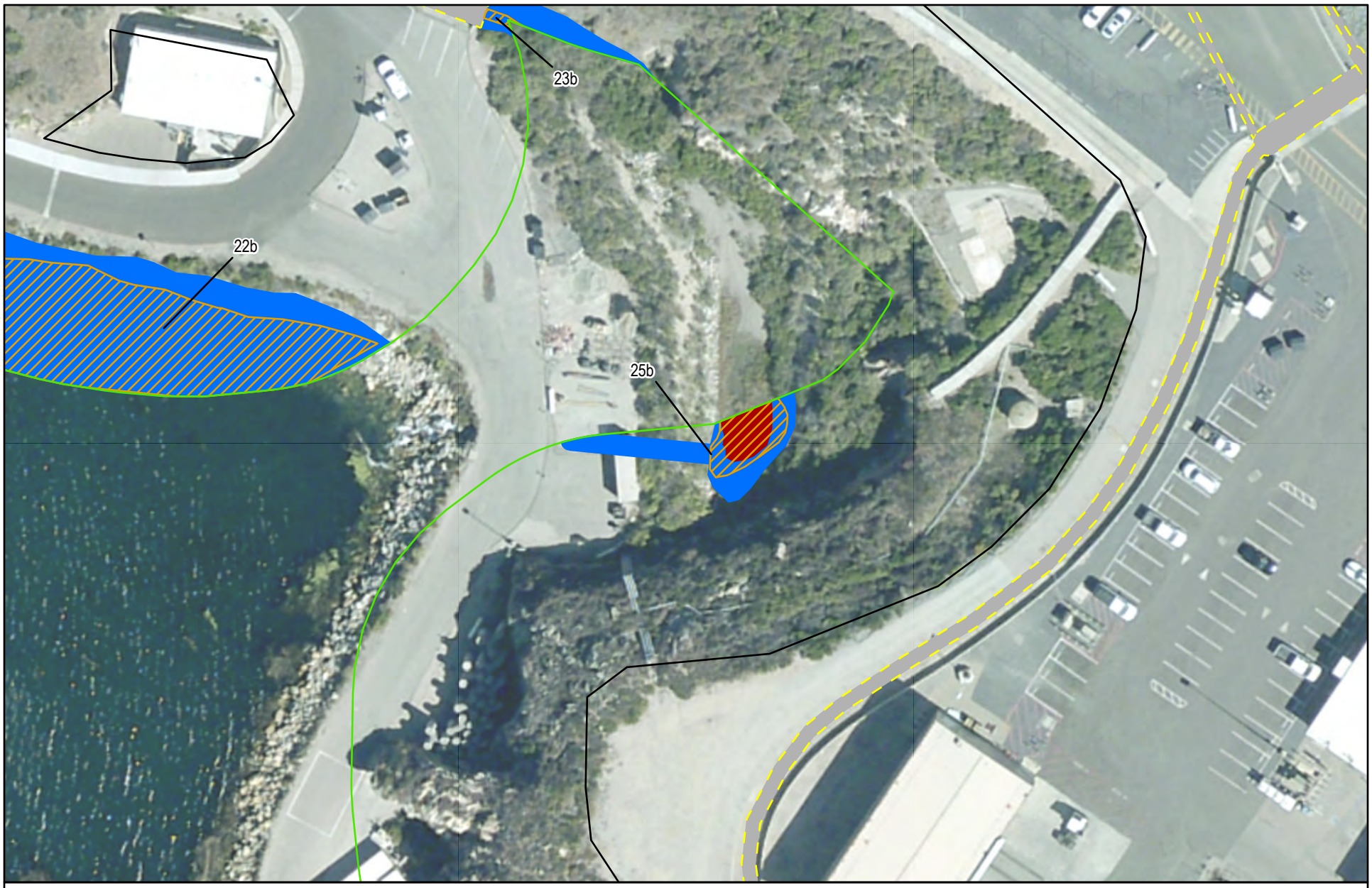


Figure 4d

Jurisdictional Waters and Wetlands

Sources: Aspen, 2022; Esri, 2022; PG&E, 2022.

Attachment 2 – Photo Exhibit

Photo 1: Northwest-facing overview of the coastal bluffs and cliffs within the survey area.

Photo 2: West-facing view of the marina, showing jurisdictional resources within the survey area.

Photo 3: Downstream view of Diablo Creek (drainages 13b and 19b), within the survey area.

Photo 4: Upstream view of Diablo Creek (drainages 13b and 19b), within the survey area.

Photo 5: Close-up photo of Diablo Creek (drainages 13b and 19b), near the inlet beneath the substation, within the survey area.

Photo 6: North-facing view of the Project site, note drainage 29a in the lower left corner of the photo.

Photo 7: Close-up view of CCC wetlands (drainage 25b) within the survey area.

Photo 8: North-facing view of CCC wetlands (drainage 25b) within the survey area.

Photo 9: Close-up view of the drainage structure at the south end of the CCC wetlands within the survey area.

Photo 10: Overview of drainage 5b within the survey area.

Photo 11: North-facing view of a non-jurisdictional concrete-lined ditch within the survey area.

Photo 12: South-facing view of concrete-lined ditch (drainage 28a) within the survey area.

Attachment 3 – Federal Non-wetland and Wetland Water Indicator Information

Table 1. Potential Geomorphic Indicators of Ordinary High-Water Marks for the Arid West

(A) Below OHW	(B) At OHW	(C) Above OHW
1. In-stream dunes	1. Valley flat	1. Desert pavement
2. Crested ripples	2. Active floodplain	2. Rock varnish
3. Flaser bedding	3. Benches: low, mid, most prominent	3. Clast weathering
4. Harrow marks	4. Highest surface of channel bars	4. Salt splitting
5. Gravel sheets to rippled sands	5. Top of point bars	5. Carbonate etching
6. Meander bars	6. Break in bank slope	6. Depositional topography
7. Sand tongues	7. Upper limit of sand-sized particles	7. Caliche rubble
8. Muddy point bars	8. Change in particle size distribution	8. Soil development
9. Long gravel bars	9. Staining of rocks	9. Surface color/tone
10. Cobble bars behind obstructions	10. Exposed root hairs below intact soil layer	10. Drainage development
11. Scour holes downstream of obstructions	11. Silt deposits	11. Surface relief
12. Obstacle marks	12. Litter (organic debris, small twigs and leaves)	12. Surface rounding
13. Stepped-bed morphology in gravel	13. Drift (organic debris, larger than twigs)	
14. Narrow berms and levees		
15. Streaming lineations		
16. Desiccation/mud cracks		
17. Armored mud balls		
18. Knick Points		

Table 2. Potential Vegetation Indicators of Ordinary High-Water Marks for the Arid West

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian Indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominant 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

Table 3. Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability of 67–99%)
Facultative	FAC	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34–66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	NI	No indicator status has been assigned

Source: Reed, 1988

Table 4. Wetland Hydrology Indicators*

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Water-Borne Sediment Deposits	FAC-Neutral Test
Drift Lines	Water-Stained Leaves
Drainage Patterns Within Wetlands	Local Soil Survey Data

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to determine that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to determine that wetland hydrology is present)
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface Water	X	
A2 – High Water Table	X	
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water Marks	**X** (Non-riverine)	**X** (Riverine)
B2 – Sediment Deposits	**X** (Non-riverine)	**X** (Riverine)
B3 – Drift Deposits	**X** (Non-riverine)	**X** (Riverine)
B6 – Surface Soil Cracks	X	
B7 – Inundation Visible on Aerial Imagery	X	
B9 –Water-Stained Leaves	X	
B10 – Drainage	X	X
B11 – Salt Crust	X	
B12 – Biotic Crust	X	
B13 – Aquatic Invertebrates	X	
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen Sulfide Odor	X	
C2 – Dry-Season Water Table		X
C3 – Oxidized Rhizospheres along Living Roots	X	
C4 – Presence of Reduced Iron	X	
C6 – Recent Iron Reduction in Tilled Soils	X	

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to determine that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to determine that wetland hydrology is present)
C7 – Thin Muck Surface	X	
C8 – Crayfish Burrows		X
C9 – Saturation Visible on Aerial Imagery		X
Group D – Evidence from other Site Conditions or Data		
D3 – Shallow Aquitard		X
D5 – FAC-Neutral Test		X

*Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

Table 6. Field Indicators of Hydric Soil Conditions*

1. Indicators of Historical Hydric Soil Conditions	2. Indicators of Current Hydric Soil Conditions
a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list	a. Aquic or peraquic moisture regime (inundation and/or soil saturation for *7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for *7 continuous days) c. Sulfidic material (rotten egg smell)

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 7. Hydric Soil Indicators for the Arid West*

Hydric Soil Indicators			Hydric Soil Indicators for Problem Soils**
All Soils	**Sandy Soils**	**Loamy and Clay Soils**	
A1 – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Verti
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	—	F7 – Depleted Dark Surface	Other (See Section 5 of Regional Supplement, Version 2.0)
A9 – 1 cm Muck	—	F8 – Redox Depressions	—
A11 – Depleted Below Dark Surface	—	F9 – Vernal Pools	—
A12 – Thick Dark Surface	—	—	—

* Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

** Indicators of hydrophytic vegetation and wetland hydrology must be present

Attachment 4 – Arid West Wetland Determination Data Sheet

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Diablo Canyon Nuclear Power Plant Decommissic City/County: San Luis Obispo/San Luis Obisp Sampling Date: 7/11/2022

Applicant/Owner: San Luis Obispo County State: CA Sampling Point: 1

Investigator(s): Justin Wood, Chris Huntley Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Basin Floor Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): California Lat: 35.207249 Long: -120.852811 Datum: NAD83

Soil Map Unit Name: Xererts-Xwerlls-Urban land complex, 0to 15 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✔ No _____ Hydric Soil Present? Yes _____ No ✔ Wetland Hydrology Present? Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 1m x 1m)			
1. Cyperus eragrostis	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 60	x 2 = 120
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

✔ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✔ **No** _____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	100					Silty loam	No odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): _____

Water Table Present? Yes ✔ No _____ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Recently formed wetland, hydric soils may develope with time. Source of water is unknown but may be from broken pipe.

Attachment 5 – Aquatic Resource Table

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude[1]	Longitude[1]	Local_Waterway
DRAINAGE_19a	CA	R2SB	RIVERINE	AREA	71.73	SQ_FT	RPW	695089.20	3898750.93	DIABLO_CREEK
DRAINAGE_20a	CA	M2RS	TIDAL_FRINGE	AREA	34,354.30	SQ_FT	RPW	695121.38	3898495.80	PACFIC_OCEAN
DRAINAGE_29a	CA	R4SB	RIVERINE	AREA	190.01	SQ_FT	NRPW	696081.04	3898050.68	UNNAMED

Notes:

(1) Latitude and Longitude are reported in NAD83 and UTM Zone 10 S.