

1.0 SPECIAL-STATUS TERRESTRIAL WILDLIFE SPECIES STUDY APPROACH – CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS

This preliminary draft study approach is provided to inform of the general methods DWR followed during the study phase under FERC's Traditional Licensing Process.

1.1 PROJECT NEXUS

Continued Project operation and maintenance (O&M) and Project-related recreation activities have the potential to affect special-status terrestrial wildlife species. For the purpose of this *Special-Status Terrestrial Wildlife Species Study Approach*, a special-status terrestrial wildlife species is defined as a terrestrial vertebrate that meets one of the following criteria: (1) is listed under the California Endangered Species Act as threatened or endangered, (2) is classified as Fully Protected by the State of California, (3) is designated by the California Department of Fish and Wildlife (CDFW) as a Species of Special Concern, (4) is designated as a United States Department of Agriculture, Forest Service Sensitive Species and is found on National Forest System (NFS) lands, (5) is listed under the Migratory Bird Treaty Act, or (6) is listed by the United States Department of the Interior, Fish and Wildlife Service (USFWS) as a Bird of Conservation Concern or protected under the Bald and Golden Eagle Protection Act. Terrestrial wildlife species listed under the federal Endangered Species Act (ESA) as threatened or endangered, or as a candidate for listing are addressed in a separate study for this relicensing effort that is specific to those resources (i.e., *ESA-Listed Bird Species Study Approach*).

1.1.1 Existing Information and Need for Additional Information

Existing, relevant, and reasonably available information regarding special-status terrestrial wildlife species and their habitat within the proposed Project boundary is provided in Section 4.6 of the California Department of Water Resources (DWR) Pre-Application Document. As a summary, DWR found no recent special-status wildlife species survey information. The California Natural Diversity Database (CNDDDB) is a statewide inventory and is continually updated; however, it is limited by where surveys have been performed and contains only those records that have been submitted to CDFW. Based on available information, 54 special-status terrestrial wildlife species are likely or known to inhabit areas within the proposed Project boundary (Table 1.1-1.).

1.1.2 Study Goals and Objectives

The goal of this study approach is to determine the quality and suitability of potential habitat for special-status terrestrial wildlife species within the proposed Project boundary.

The objective of this study approach is to gather sufficient data necessary to fill recognized gaps in existing information regarding the potential for special-status terrestrial wildlife species to occur within the proposed Project boundary.

1.1.3 Study Methods

1.1.3.1 *Study Area*

The study area consists of the area within the proposed Project boundary, excluding lands overlying the San Bernardino Tunnel on which DWR does not perform any Project activities. The study area is shown in Figure 1.1-1.

1.1.3.2 *General Concepts and Procedures*

- Personal safety is the most important consideration of each fieldwork team. Fieldwork will only occur in safely accessible areas and under conditions deemed safe by the field crews. Locations within the study area that cannot be accessed in a safe manner (e.g., locations containing dense vegetation or unsafe slopes) and areas inundated when the surveys are performed, will not be surveyed; these areas will be identified in the data summary and an explanation for survey exclusion will be provided.
- The study approach does not include the development of requirements for the new license, which will be addressed outside the study.
- The study approach focuses on the special-status terrestrial wildlife species within the proposed Project boundary, but the study area is specific to locations that can support that resource.
- If required for the performance of the study approach, DWR will make a good faith effort to obtain permission to access private property well in advance of initiating the study. DWR will only enter private property if permission has been provided by the landowner.
- DWR will acquire all necessary agency permits and approvals prior to beginning fieldwork for the study.
- Field crews may make variances to the study approach in the field to accommodate actual field conditions and unforeseen problems. Any such variances will be noted in the data resulting from the study.
- To prevent the introduction and transmittal of amphibian chytrid fungus and invasive aquatic species (e.g., quagga mussels, zebra mussel, and Asian clams), field crews will be trained on, provided with, and use materials (e.g., Quat) for decontaminating their boots, waders, and other equipment when leaving or traveling between water-based study sites. Field crews will follow DWR's Quagga and Zebra Mussel Rapid Response Plan and CDFW's Aquatic Invasive Species Decontamination Protocol which can be found at the following link: (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=43333>). All boats used during the study will follow cleaning protocols, including inspections before and

after use. All decontamination requirements in place at Project reservoirs including those of DWR's *Quagga and Zebra Mussel Rapid Response Plan* for the State Water Project will be strictly followed (DWR 2010).

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Table 1.1-1. Special-Status Terrestrial Wildlife Species with the Potential to Occur in the Proposed Project Boundary

| Common Name/ Scientific Name | Status | Habitat Association Summary | Temporal and Spatial Distribution ¹ | Occurrence in Project Area ² |
|---|---------|--|--|--|
| Large-blotched Ensatina (<i>Ensatina klauberi</i>) | FSS | Occurs mostly in oak and pine woodlands chaparral, and talus in the Peninsular Ranges (San Jacinto Mountains and south), but intergrades with other forms of Ensatina that occur in the San Bernardino Mountains. Found under surface objects, in rodent burrows, and other subterranean retreats. | Yearlong – COW, CSC, MCH, MCP, MHW, MHC, PPN, SMC, VRI | No records. Intergrade forms of “blotched” Ensatina have been found north of Big Bear Lake more than 15 miles east of Project area. |
| San Gabriel Slender Salamander (<i>Batrachoseps gabrieli</i>) | FSS | Occurs in or adjacent to stable talus slopes along a band extending from the upper parts of the San Gabriel River watershed (San Gabriel Mountains, Los Angeles County) to Waterman Canyon (San Bernardino Mountains, San Bernardino County). Found under rocks, rotted woody debris, or vegetation in areas of mixed conifer forest or chaparral. | Yearlong – BAR, MHW, MHC, SMC | Two records in the CNDDDB from the Project vicinity (DEV, SBN quads). |
| Coast Horned Lizard (<i>Phrynosoma blainvillii</i>) | SSC | Occurs in scrubland, grassland, coniferous woods, and broadleaf woodlands where there are openings for basking; areas with loamy or sandy soil suitable for burrowing; scattered shrubs or clumps of grass for hiding cover; and ant colonies (a primary food source). Often found on edges of arroyo bottoms, dry washes, and along dirt roads. | Yearlong – AGS, CRC, COW, CSC, MCH, MHC, PP, VRI | 27 records in the CNDDDB from the Project vicinity (AVS, CAJ, DEV, HAM, LAR, SBN, and SWL quads). No records in Project area. |
| Orange-throated Whiptail (<i>Aspidoscelis hyperythra</i>) | FSS | Occurs mostly in Orange, Riverside and San Diego Counties; within San Bernardino County only known from the area south of the City of San Bernardino. Found in coastal scrub, chaparral, and valley-foothill hardwood, especially in openings with well-drained, compacted soils, patches of sandy soil, and rocks. | Yearlong – CRC, COW, CSC, MCH | One record in CNDDDB from the Project vicinity (SBN quad). No records in Project area. |
| Southern Rubber Boa (<i>Charina umbratica</i>) | ST, FSS | The species range is not well documented, but includes parts of the San Bernardino Mountains east of Strawberry Peak and in the San Jacinto Mountains. Found in open coniferous and oak-conifer forests above 5,000 feet elevation. | Yearlong– MCP, MHW, MHC, MRI, PPN, SMC, VRI | 16 records in CNDDDB from the Project vicinity (HAM quad, exact locations suppressed). No records in Project area. |
| Northern Three-lined Rosy Boa (<i>Lichanura orcuttii [trivirgata]</i>) | FSS | Found in various arid and semi-arid habitats, including rocky deserts, canyons, and shrubby areas, particularly in riparian sites. | Yearlong – CRC, CSC, DSC, DSW, MCH, MCP | Three records in CNDDDB from the Project vicinity (DEV, LAR, and SBN quads). No records in Project area. |
| San Bernardino Ring-necked Snake (<i>Diadophis punctatus modestus</i>) | FSS | The species occurs in a wide variety of moist habitats including woodland openings, rocky slopes, chaparral, wet meadows, and farmland, where there is suitable surface cover. | Yearlong – AGS, CRC, COW, CSC, DSC, MCH, MCP, MHW, MHC, PPN, SMC, URB, VRI | Four records in CNDDDB from the Project vicinity (SBN and SWL quads). No records in Project area. |
| San Bernardino population of California Mountain Kingsnake (<i>Lampropeltis zonata parvirubra</i>) | FSS | Found in montane, forested areas of Southern California, including the San Jacinto, San Bernardino, and San Gabriel Mountains, often in rocky sites. | Yearlong – AGS, COW, MCH, MCP, MHW, MHC, MRI, PP, SMC, VRI | No records. |
| Coast Patch-nosed Snake (<i>Salvadora hexalepis virgultea</i>) | SSC | Occurs in coastal California from San Luis Obispo County to Baja California in coastal plain, canyons, rocky hillsides, and brushy areas. In San Bernardino County likely limited to low elevation coastal plain. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, SGB, VRI | No records. |
| Common Loon (<i>Gavia immer</i>) | SSC | Winters on lakes, reservoirs, rivers, estuaries, and coastlines. Nests on lakes and other open water areas where there is minimal disturbance. Does not nest in San Bernardino County. | Winter – LAC | No records in CNDDDB from the Project vicinity (which only includes nesting records). However, known to winter within the Project boundary at Silverwood Lake. |

Table 1.1-1. Special-Status Terrestrial Wildlife Species with the Potential to Occur in the Proposed Project Boundary (continued)

| Common Name/ Scientific Name | Status | Habitat Association Summary | Temporal and Spatial Distribution ¹ | Occurrence in Project Area ² |
|--|------------------|--|---|--|
| American white pelican (<i>Pelecanus erythrorhynchos</i>) | SSC | Wintering and post-breeding pelicans occur (sometimes in large numbers) along the coast, and on lakes, reservoirs, rivers, estuaries, bays, and marshes. Rarely breeds in southern California, except along Colorado River | Summer – BAR Yearlong – LAC | No records. |
| Least bittern (<i>Ixobrychus exilis</i>) | SSC, BCC | Occurs in freshwater or brackish marshes with tall, dense emergent vegetation. A secretive species that can be difficult to document. | Summer – LAC | No records. |
| Redhead (<i>Aythya Americana</i>) | SSC | Winters and rests during migration in open water on lakes, ponds, and reservoirs. Nests in emergent wetlands, especially where dense cattails or tule are interspersed with open water. | Winter – LAC | No records. |
| Northern Goshawk (<i>Accipiter gentilis</i>) | SSC, FSS, BCC | Year-round resident of forested habitats, particularly mature coniferous and mixed forests. Evidently few known recent occurrences in the San Bernardino Mountains | Winter – CRC, COW, MCH, SGB, VRI Yearlong – MCP, MHW, MHC, MRI, PPN, SMC | No records. |
| Golden Eagle (<i>Aquila chrysaetos</i>) | FP, BCC | Generally open country, open wooded country, and barren areas, especially in hilly or mountainous regions. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, SGB, SMC, URB, VRI | No records in CNDDDB. Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). Reported by HELIX (2014) from north of Project area. |
| Northern harrier (<i>Circus cyaneus</i>) | SSC | Marshes, meadows, grasslands, open rangelands, emergent wetlands, and cultivated fields. | Winter – CRC, DSC, DSW, MCH Summer – MCP, MHW Yearlong – AGS, BAR, COW, CSC, LAC, SGB, URB, VRI | No records in CNDDDB. Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). |
| White-tailed kite (<i>Elanus leucurus</i>) | FP | Savanna, open woodland, marshes, partially cleared lands and cultivated fields, mostly in lowland situations. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, MCH, URB, VRI | No records. |
| Prairie Falcon (<i>Falco mexicanus</i>) | BCC | Savanna, perennial grasslands, rangeland, and desert scrub. Nests on cliff ledges. | Not reported by WHR | No records in CNDDDB. Reported by HELIX (2014) from north of Project area. |
| American peregrine falcon (<i>Falco peregrinus anatum</i>) | FP, BCC | Breeds in open landscapes with cliffs. Winters in any open habitat, mudflats, coastlines, lake edges and mountain chains, especially in areas where potential prey (other birds) are numerous. | Yearlong – AGS, BAR, CRC, COW, CSC, LAC, MCH, MCP, MHW, MHC, PPN, SGB, SMC, URB, VRI | No records. |
| Bald eagle (<i>Haliaeetus leucocephalus</i>) | SE, FP, FSS, BCC | Breeding habitat usually close to coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources. Preferentially roosts in conifers or other sheltered sites in winter in some areas. | Winter – CRC, CSC, MCH, MCP Yearlong – AGS, BAR, COW, LAC, MHW, MHC, MRI, PPN, SGB, SMC, VRI | Five records in CNDDDB from the Project vicinity (HAM, LAR, and SWL quads), including occurrences at Silverwood Lake (mostly wintering and no successful nesting). |
| Long-eared owl (<i>Asio otus</i>) | SSC | Riparian bottomland forest with over story of willows and cottonwoods; riparian forest along stream corridors (often dominated by live oak trees). Wooded areas with dense vegetation needed for roosting and nesting, adjacent open areas needed for hunting. | Yearlong – AGS, CRC, COW, DSC, MCH, MCP, MHW, MWC, PPN, SGB, SMC, VRI Summer -MRI | No records. |
| Burrowing owl (<i>Athene cunicularia</i>) | SSC, BCC | Open grasslands and savanna, sometimes in open areas such as vacant lots near human habitation or airports. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, SGB, URB, VRI | 17 records in CNDDDB from the Project vicinity (AVS, DEV and HES quads). No records in Project area. |

Table 1.1-1. Special-Status Terrestrial Wildlife Species with the Potential to Occur in the Proposed Project Boundary (continued)

| Common Name/ Scientific Name | Status | Habitat Association Summary | Temporal and Spatial Distribution ¹ | Occurrence in Project Area ² |
|---|---------------|---|---|---|
| California spotted owl (<i>Strix occidentalis occidentalis</i>) | SSC, FSS, BCC | Mixed forests dominated by black oak, lodgepole pine, red fir from 1200 to 5500 feet elevation | Yearlong – COW, MHW, MHC, PPN, SMC, VRI | No records in Project area, but occurs in forests south of Silverwood Lake outside of Project boundary. |
| Olive-sided flycatcher (<i>Contopus cooperi</i>) | SSC, BCC | Non-breeding habitat includes a variety of forest, woodland, and open areas with scattered trees, especially where tall dead snags are present. Primary habitat is mature, evergreen montane forest. Breeds in various forest and woodland habitats. | Summer – CRC, MCH, MHW, MHC, PPN, SMC | No records. |
| Vermilion flycatcher (<i>Pyrocephalus rubinus</i>) | SSC | Occurs in widely scattered locations of scrub desert, cultivated lands, riparian woodlands, usually near water, including ditches, ponds, and irrigation. Trees and tall shrubs used for nesting and roosting. | Not reported by WHR | No records in CNDDDB. No records in CNDDDB. Reported by HELIX (2014) from north of Project area. No records in Project area. |
| Purple martin (<i>Progne subis</i>) | SSC | Found in a wide variety of forest and woodland areas, where open and partly open sites occur, frequently near water or around towns, where dragonflies and other large, aerial insects are available prey. | Summer – AGS, COW, LAC, MHW, MHC PPN, SMC, URB, VRI | No records. |
| Le Conte's thrasher (<i>Toxostoma lecontei</i>) | SSC, BCC | Closely associated with saltbush and found in relatively open areas including desert scrub and dry washes. | Yearlong – DSC, DSW | Four records in CNDDDB from the Project vicinity (AVS, DES, and HES quads). Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). No records in Project area. |
| Loggerhead shrike (<i>Lanius ludovicianus</i>) | SSC, BCC | Open country with scattered trees and shrubs, savanna, desert scrub, and, occasionally, open woodland; often perches on poles, wires or fence posts | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MHW, MHC, PPN, SGB, VRI Winter – URB | No records in CNDDDB. Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). Reported by HELIX (2014) from north of Project area. No records in Project area. |
| Gray vireo (<i>Vireo vicinior</i>) | SSC, FSS, BCC | Dry chaparral; west of desert in chamise-dominated habitat, mountains of Mojave Desert; associated with juniper and sagebrush | Summer – CRC, MCH | Two records in CNDDDB from the Project vicinity (HES quad). No records in Project area. |
| Yellow warbler (<i>Setophaga petechia</i>) | SSC, BCC | Open scrub, second-growth woodland, thickets, farmlands, and gardens, especially near water; riparian woodlands, especially areas with willows. | Migrant – CRC, CSC, DSW, MCH Summer – COW, MCH, MHW, MHC, PPN, SMC, URB, VRI | One record in CNDDDB in Project vicinity (HES quad). Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). Reported by HELIX (2014) from north of Project area. No records in Project area. |
| Yellow-breasted chat (<i>Icteria virens</i>) | SSC | Second growth, shrubby old pastures, thickets, bushy areas, scrub, woodland undergrowth, and fence rows, including low wet places near streams, pond edges, or swamps; thickets with few tall trees; early successional stages of forest regeneration; commonly in sites close to human habitation. | Migrant – CSC Summer – VRI Yearlong -VRI | No records. |
| Grasshopper sparrow (<i>Ammodramus savannarum</i>) | SSC | Prefer grasslands of intermediate height for breeding and often associated with clumped vegetation, interspersed with patches of bare ground. In San Bernardino County likely limited to South Coast bioregion. | Summer – AGS | No records. |
| Bell's sage sparrow (<i>Artemisiospiza belli belli</i>) | BCC | Strongly associated with sagebrush for breeding. Also found in salt-bush brushland, shadscale, antelope brush, rabbitbrush, mesquite, and chaparral. | Winter – DSC Yearlong – CRC, CSC, MCH, MCP, SGB | One record in CNDDDB from the Project vicinity (DEV quad). Observed within 1 mile north of Silverwood Lake (Aspen Environmental Group 2006). |
| Oregon Vesper sparrow (<i>Pooecetes gramineus affinis</i>) | SSC, BCC | Found in various open habitats with grass, including sagebrush steppe, meadows, pastures and roadsides. | Winter – AGS, COW, MCH Summer – MCP, SGB | No records. |

Table 1.1-1. Special-Status Terrestrial Wildlife Species with the Potential to Occur in the Proposed Project Boundary (continued)

| Common Name/ Scientific Name | Status | Habitat Association Summary | Temporal and Spatial Distribution ¹ | Occurrence in Project Area ² |
|--|----------|---|---|--|
| Summer tanager (<i>Piranga rubra</i>) | SSC | Breeds near gaps and edges of open forests (deciduous trees, mixed pine-oak woodlands). Found along streams with willows, cottonwoods, mesquite and saltcedar. | Summer – VRI Migrant – DSW | No records. |
| Tricolored blackbird (<i>Agelaius tricolor</i>) | SSC, BCC | Freshwater marshes of cattails, tule, and sedges. Nests in vegetation of marshes or thickets, sometimes nests on the ground. Historically strongly tied to emergent marshes; in recent decades much nesting has shifted to non-native vegetation. | Yearlong – AGS, URB, VRI | No records. |
| Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>) | SSC | Fresh-water marshes of cattail, tule, or bulrushes. Nests in wet grasses, reeds, and cattails. Also in open cultivated lands, pastures and fields. | Summer – AGS Yearlong -LAC | No records. |
| Pallid bat (<i>Antrozous pallidus</i>) | SSC, FSS | Arid deserts and grasslands, often near rocky outcrops and water. Less abundant in evergreen and mixed conifer woodland. Usually roosts in rock crevices or buildings, less often in caves, tree hollows, mines, etc. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, SGB, SMC, VRI Summer -URB | No records. |
| Townsend's big-eared bat (<i>Corynorhinus townsendii</i>) | SSC, FSS | Maternity and hibernation colonies typically are in caves and mine tunnels. Prefers relatively cold places for hibernation, often near entrances and in well-ventilated areas. | Yearlong – BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, SGB, SMC, URB, VRI Summer – AGS | One record in CNDDDB from the Project vicinity (AVS quad). No records in Project area. |
| Spotted bat (<i>Euderma maculatum</i>) | SSC | Solitary bat found in arid deserts, grasslands, and conifer forests where there are suitable roosts, including crevices in cliffs, caves, and building. Possibly occupies coniferous stands in summer and migrates to lower elevations in late summer/early fall. | Yearlong – AGS, COW, CSC, DSC, DSW, MCP, MHC, PPN, SGB, SMC, URB, VRI | No records. |
| Western mastiff bat (<i>Eumops perotis californicus</i>) | SSC | Roosts in crevices and shallow caves on the sides of cliffs and rock walls, and occasionally buildings. Roosts usually high above ground with unobstructed approach. Most roosts are not used throughout the year. May alternate between different day roosts. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, URB, VRI | Three records in CNDDDB from the Project vicinity (HAM quad). No records in Project area. |
| Western red bat (<i>Lasiurus blossevillii</i>) | SSC | Roosts in foliage (mostly in trees), forages in open areas (not including deserts) from sea level up through mixed conifer forests. Typically occurs near edges and in habitat mosaics. Migrates between summer and winter ranges. | Yearlong – AGS, CRC, COW, CSC, MCP, MHC, URB, VRI Summer -LAC, MCH, MHW, PPN, SMC | No records. |
| Western yellow bat (<i>Lasiurus xanthinus</i>) | SSC | Roosts in trees in valley foothill riparian, desert riparian, desert wash and palm oasis habitats. In California recorded only at sites below 2000 feet elevation. Migrates between summer and winter ranges. | Yearlong – COW Migrant – VRI Summer - DSW | No records. |
| San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>) | SSC | The species occurs in open country with scattered thickets or patches of shrubs, including open plains, fields, and deserts. The sub-species is restricted to the South Coast bioregion. | Yearlong – AGS, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, SGB, SMC, URB, VRI | No records. |
| San Bernardino northern flying squirrel (<i>Glaucomys sabrinus californicus</i>) | SSC, FSS | Occurs mostly in coniferous and mixed forest, and sometimes in deciduous woodlands in relatively high elevation parts of the San Bernardino Mountains and, at least historically, the San Jacinto Mountains. Trees and snags with cavities are likely important as nesting sites. | Yearlong – COW, MHW, MHC, PPN, SMC, VRI | Five records in CNDDDB from Project vicinity (HAM, SBN, and SWL quads), including one within Project area in forests on south side of Silverwood Lake. |
| Mohave Ground Squirrel (<i>Xerospermophilus mohavensis</i>) | ST | Burrowing species associated with various habitat types in the western Mojave Desert, including areas of saltscrub, Joshua tree woodland, and creosote scrub. Populations may decline sharply during drought conditions. | Yearlong – AGS, DSC | Three records in CNDDDB from Project vicinity (AVS and HES quads). No records in Project area. |
| San Diego pocket mouse (<i>Chaetodipus fallax</i>) | SSC | Associated with a wide variety of arid, shrub-and herbaceous-dominated habitats, where there are sandy soils, rocky slopes, or coarse gravel. Found in burrows during daytime. | Yearlong – AGS, CRC, CSC, DSC, DSW, MCH, SGB | No records. |
| White-eared pocket mouse (<i>Perognathus alticolus alticolus</i>) | SSC, FSS | Poorly known taxon restricted to a few sites in the Tehachapi and near Strawberry Peak in the San Bernardino Mountains, mostly from open, dry pine forests. The population in the San Bernardino Mountains may be extirpated. | Yearlong – MCH, SGB | Three records in CNDDDB from the Project vicinity (HAM quad) dated 1920-1934. No records in Project area. |

Table 1.1-1. Special-Status Terrestrial Wildlife Species with the Potential to Occur in the Proposed Project Boundary (continued)

| Common Name/ Scientific Name | Status | Habitat Association Summary | Temporal and Spatial Distribution ¹ | Occurrence in Project Area ² |
|--|--------|---|--|--|
| Los Angeles Pocket Mouse (<i>Perognathus longimembris brevinasus</i>) | SSC | Occurs in low elevation coastal grassland, alluvial sage scrub, and coastal sage scrub. In San Bernardino County, likely restricted to areas east of the base of the San Bernardino Mountains. | Yearlong – CCH, COW, CSC, DSC, DSW, MCH, MCP, SGB | No records. |
| Southern grasshopper mouse (<i>Onychomys torridus ramona</i>) | SSC | Most common in arid desert habitats, including desert scrub and alkali desert scrub, but also occurring in coastal scrub, sagebrush, chaparral, and other habitats. | Yearlong – AGS, CSC, DSC, DSW, MCH, SGB, VRI | No records. |
| Monterey dusky-footed woodrat (<i>Neotoma macrotis luciana</i>) | SSC | The species is generally found in dense chaparral, coastal sage-scrub, pinyon-juniper, oak and riparian woodlands and mixed conifer forest habitats that have a well-developed understory. | Yearlong – | No records. |
| San Diego Desert Woodrat (<i>Neotoma lepida intermedia</i>) | SSC | The species occurs over a large part of the arid western United States and Mexico, whereas the sub-species is evidently limited to coastal areas from San Luis Obispo County south where populations have declined. The species is found in Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats. | Yearlong – CRC, CSC, DSC, DSW, MCH, MCP, MHC, SGB | No records. |
| Ringtail (<i>Bassariscus astutus</i>) | FP | Associated with areas with a mixture of forest and shrub-dominated habitats, with rock recesses, hollows, and other sites suitable for nesting and cover and within 0.6 miles of water. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, MHC, PPN, SGB, SMC, VRI | No records in CNDDDB. However, reported to occur in Silverwood Lake State Recreation Area by California Watchable Wildlife (2015). |
| American Badger (<i>Taxidea taxus</i>) | SSC | Occurs in open or brushy habitats, including early successional stages of forests, with dry, friable, often sandy, soils for burrowing. | Yearlong – AGS, BAR, CRC, COW, CSC, DSC, DSW, MCH, MCP, MHW, SGB, VRI | No records. |

¹Temporal and Spatial Distribution: based on CWHR habitats that are mapped within proposed Project boundary and does not necessarily indicate known occurrence of the species.

²CNDDDB = California Natural Diversity Database (Cal Fish and Wildlife 2015)

Key:

- ADS = Alkali Desert Scrub
- AGS = Annual Grassland
- AVS = Apple Valley South
- BAR = Barren
- BCC = USFWS Birds of Conservation Concern
- CAJ = Cajon MRI = Montane Riparian
- Cal FP = Fully Protected
- PPN = Ponderosa Pine
- CESA = California Endangered Species Act
- CNDDDB = California Natural Diversity Database
- CRC = Chamise-redshank chaparral
- COW = Coastal Oak Woodland
- CSC = Coastal Scrub
- DEV = Devore
- DRI = Desert Riparian
- DSC = Desert Scrub
- DSW = Desert Wash
- EUC = Eucalyptus
- FSS = Forest Service Sensitive
- HAM = Harrison Mountain
- HES = Hesperia
- JUN = Juniper
- LAC = Lacustrine
- LAR = Lake Arrowhead
- MCH = Mixed Chaparral
- MCP = Montane Chaparral
- MHC = Montane Hardwood-Conifer
- MHW = Montane Hardwood
- Quad = United States Geological Survey topographic quadrangles
- RIV = Riverine
- SBN = San Bernardino North
- SC = State Candidate
- SE = State Endangered
- SGB = Sagebrush
- SMC = Sierran Mixed Conifer
- SSC = State Species of Concern
- ST = State Threatened

SWL = Silverwood Lake
URB = Urban
USFWS = U.S. Fish and Wildlife Service
VFR = Valley Foothill Riparian
WTM = Wet Meadow

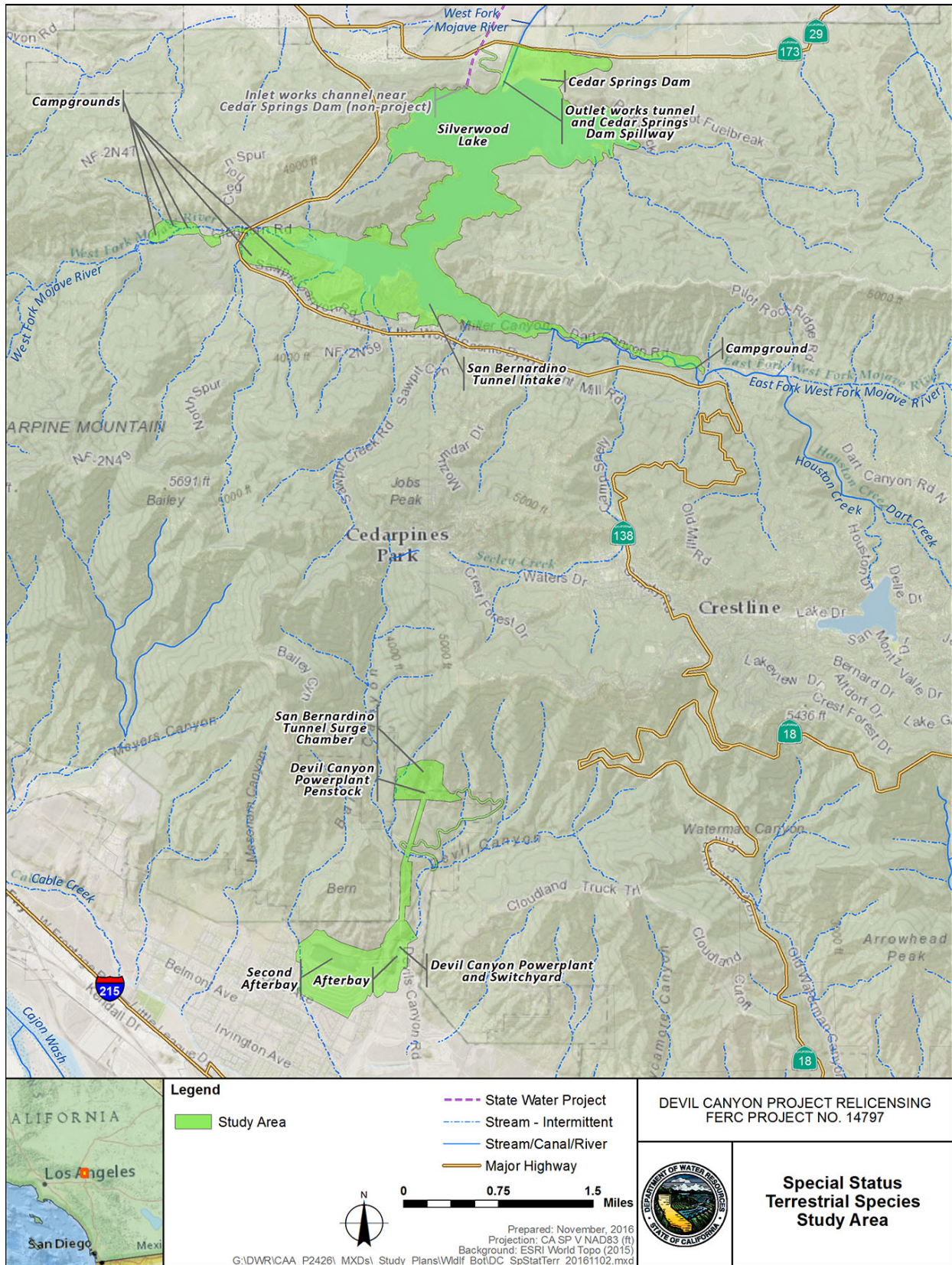


Figure 1.1-1. Special-status Terrestrial Wildlife Study Area

1.1.3.3 Methods

This study consists of two steps: (1) select sampling locations and create field study maps; and (2) conduct field habitat assessments to evaluate habitat. Each step is described below.

Step 1 – Select Sampling Locations and Create Field Study Maps. There were 16 terrestrial CWHR vegetation types identified in the proposed Project boundary, as shown in Table 1.1-2 below. Using a Geographic Information System, DWR will randomly select sampling points in representative habitats, with more points in areas with higher potential for special-status wildlife species (e.g., Valley Foothill Riparian) and larger acreage inside the proposed Project boundary.

Table 1.1-2. California Wildlife Habitat Relationship Within the Proposed Project Boundary

| California Wildlife Habitat Relationship Type | Acreage | Percentage of Study Area | Number of Sampling Points |
|---|---------|--------------------------|---------------------------|
| <i>Tree-Dominated Habitats</i> | | | |
| Sierran Mixed Conifer | 13 | 1 | 1 |
| Ponderosa Pine | 1 | <1 | 1 |
| Montane Hardwood (MHW) | 150 | 14 | 2 |
| Montane Hardwood-Conifer | 25 | 2 | 2 |
| Coastal Oak Woodland (COW) | 4 | <1 | 1 |
| Valley Foothill Riparian (VRI) | 51 | 5 | 3 |
| <i>Shrub-Dominated Habitats</i> | | | |
| Sagebrush (SGB) | 6 | 1 | 1 |
| Montane Chaparral | <1 | <1 | 1 |
| Mixed Chaparral (MCH) | 407 | 38 | 5 |
| Chamise-Redshank Chaparral (CRC) | 58 | 5 | 2 |
| Coastal Scrub (CSC) | 99 | 9 | 2 |
| Desert Wash (DSW) | 44 | 4 | 2 |
| Desert Scrub | 24 | 2 | 2 |
| <i>Herbaceous-Dominated Habitats</i> | | | |
| Annual Grassland (AGS) | 13 | 1 | 1 |
| <i>Developed Habitats</i> | | | |
| Urban (URB) | 128 | 12 | 2 |
| <i>Non-vegetated Habitats</i> | | | |
| Barren (BAR) | 58 | 5 | 2 |
| Total | 1,082 | 100 | 30 |

DWR will produce as part of the study updated maps that will include CWHR habitat types, sampling points, CNDDDB occurrences or other known locations of special-status wildlife species, Protected Activity Centers and Home Range Areas, and all Project facilities.

Step 2 – Conduct Field Habitat Assessments to Evaluate Habitat and Incidentally Document Special-Status Terrestrial Wildlife. Field habitat assessments and characterizations will be conducted at representative sampling points, using the CDFW's CWHR System data forms (CDFW 2016). Information collected on these forms includes plant species composition, stages, structure, percent cover, and habitat elements, as well as diameter at breast height of wooded habitats. Evidence of Project O&M activities and Project-related recreation activities in the vicinity of the sampling points will also be documented. Photographs of all sampling points will be taken in each cardinal direction from the center point of the plot.

If a special-status terrestrial wildlife species is identified, the survey team will prepare a California Native Species Field Survey Form, which records data required to be submitted to CDFW so that the occurrences can be added to the California Natural Diversity Data Base.

1.1.3.4 Quality Assurance and Quality Control

Field data will be collected in a manner that promotes high quality results, and will be subject to appropriate quality assurance/quality control (QA/QC) procedures, including spot-checks of transcription and comparison of Global Positioning System maps with field notes to verify locations of sensitive habitats and species.

1.1.3.5 Analysis

Field data will be used in conjunction with CWHR to refine the list and habitats of special-status terrestrial wildlife potentially occurring in the study area. Maps created in Step 1 will be used to identify areas within the study area in which special-status wildlife habitat and Project facilities and O&M overlap.

1.1.3.6 Reporting

DWR will compile and summarize results of this study, as well as other existing and relevant information for incorporation into the DLA and FLA.

1.1.4 Consistency of Methodology with Generally Accepted Scientific Practices

This study is consistent with the goals, objectives, and methods outlined for most recent Federal Energy Regulatory Commission (FERC) hydropower relicensing efforts in California, including the Yuba River Development Project (FERC Project No, 2246), French Meadows Transmission Line Project (FERC Project No. 2479), Camp Far West Transmission Line Project (FERC Project No. 10821), Drum-Spaulding Project (FERC Project No, 2310) and Yuba-Bear Hydroelectric Project (FERC Project No. 2266).

1.1.5 Schedule

The study may begin as early as May 2017. DWR anticipates the schedule below will be followed to complete the study.

| | |
|-----------------------------|-----------------------------|
| Fieldwork Preparation | May 2017 – June 2017 |
| Fieldwork | June 2017 – August 2017 |
| Data QA/QC | August 2017 – December 2017 |
| Data Analysis and Reporting | August 2017 – December 2017 |

1.1.6 Level of Effort and Cost

Based on the work effort described above, DWR estimates the current cost to complete this study will range between \$130,000 and \$173,000.

1.1.7 References

- CDFW. 2016. Bald Eagles in California. October 2016.
<https://www.wildlife.ca.gov/Conservation/Birds/Bald-Eagle>
- CDFW. 2016. California Natural Diversity Database. Site accessed September 2016.
<https://www.wildlife.ca.gov/Data/CNDDDB>
- CDFW. 2016. California Wildlife Habitat Relationships. Site accessed September 2016.
<https://www.wildlife.ca.gov/Data/CWHR>
- CDFW. 2017. California Natural Diversity Database Special Animals list. Site accessed April 2017.
- DWR. 2010. The Quagga and Zebra Mussel Rapid Response Plan for the State Water Project. 93 pp. CONFIDENTIAL/PRIVILEGED – Not for Public Distribution.