

## **B.6 Special-status Plant and Wildlife Descriptions**

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## Special-Status Species Accounts

### PLANTS PRESENT OR WITH A MODERATE OR HIGH POTENTIAL TO OCCUR

#### **Southern California black walnut (*Juglans californica* var. *californica*)**

*Status:* Southern California black walnut is a CRPR List 4.2 species. This species is not federally or State listed as threatened or endangered.

*General Distribution:* Southern California black walnut is endemic to southwestern California, from Santa Barbara to San Diego County, and inland to western San Bernardino and Riverside Counties.

*Distribution in the Study Area:* This species was observed at three locations near the existing levee structure within Reaches 1 and 2 of the SCR-3 Project area.

*Habitat and Habitat Associations:* Southern California black walnut occurs in riparian or upland woodlands, chaparral, coastal sage scrub, and alluvial shrublands.

*Natural History:* Quinn (1990) described southern California black walnut as a species approaching “custodial” status, which he defined as one occurring only in remnant reserve populations where their protection is an explicit management goal. CDFW (2002) considers walnut woodland a special status plant community due mainly to land use conversions, ongoing threats at the “urban interface” areas, and because little of it occurs on public lands (Stephenson and Calcarone, 1999). Southern California walnut woodland is treated as a special-status plant community due to historic and ongoing losses.

*Threats:* This species has been threatened by habitat conversion.

#### **White rabbit tobacco (*Pseudognaphalim leucocephalum*)**

*Status:* White rabbit tobacco is a CRPR List 2.2 species. This species is not federally or State listed as threatened or endangered; however it is considered a County of Ventura locally important species.

*General Distribution:* White rabbit tobacco occurs in Southern California, Arizona, New Mexico, Texas, and Mexico. In California, this species has been found in Los Angeles, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties.

*Distribution in the Study Area:* Although not observed within the SCR-3 Project areas, suitable habitat is present within Reach 4 and in adjacent areas of the Santa Clara River.

*Habitat and Habitat Associations:* White rabbit tobacco is associated with sandy or gravelly substrates in chaparral, cismontane woodland, coastal scrub, and riparian woodland. This species has been known to occur at elevations between 0 – 2100 meters AMSL.

*Natural History:* This perennial herb blooms from July – December (Prigge and Gibson, 2015).

*Threats:* There are no identified threats to this species.

## WILDLIFE PRESENT OR WITH A MODERATE OR HIGH POTENTIAL TO OCCUR

### INVERTEBRATES

**Slotted lancetooth snail (*Haplotrema caelatum*), Zaca shoulderband snail (*Helminthoglypta phlyctaena*), sage shoulderband snail (*H. salviae*), Trask shoulderband snail (*H. traskii*), Ventura shoulderband snail (*H. venturensis*), Matilija shoulderband snail (*H. willeti*)**

*Status:* The slotted lancetooth snail, Zaca shoulderband snail, sage shoulderband snail, Trask shoulderband snail, Ventura shoulderband snail, and Matilija shoulderband snail are considered County of Ventura locally important species. Additionally, the Trask shoulderband snail is considered a CDFW Special Animal. None of these taxa are federally or State listed as threatened or endangered.

*General Distribution:* All of the terrestrial snails listed above have been reported from Ventura County (Magney, 2005).

*Distribution in the Study Area:* Although there are no known records from the Study Area, the Study Area is located within the known geographic distribution for the taxa listed above (Magney, 2005). Suitable habitat occurs within the upper terrace located in Reach 4, the toes of the existing levee structures, and within the adjacent Santa Clara River.

*Habitat and Habitat Associations:* All of the taxa listed above are terrestrial and occur in a variety of habitats, including coastal sage scrub, chaparral, oak woodland, and riparian woodland.

*Natural History:* *Haplotrema* is a genus of predatory, air-breathing terrestrial snails. The shells of these snails vary in size from relatively small to medium and usually consist of a low, flattened spire and very wide umbilicus. The structure of the radula, or teeth, is unusual in this genus. The haplotrematids have fewer cusps than most snails, but they are considerably elongated (hence the name “lancetooth”), suitable for predatory behavior. The known diet of these snails consists entirely of other terrestrial mollusks (Pilsbry, 1946).

Members of the genus *Helminthoglypta* are air-breathing, terrestrial snails. Shells are relatively medium to large in size, with no apertural teeth, but usually with a reflected apertural lip. These snails possess a single dart apparatus with one stylophore (dart sac) and two mucus glands which are utilized to create love darts. Love darts, shaped in many distinctive ways which vary considerably between species, are hard, sharp, calcareous or chitinous darts that are used as part of the sequence of events during courtship before actual mating takes place.

*Threats:* There are no identified threats to these species.

### **Santa Monica Mountains timema (*Timema monikensis*)**

*Status:* The Santa Monica Mountains timema is considered a County of Ventura locally important species. This taxon is not federally or State listed as threatened or endangered.

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*General Distribution:* This species is known to occur throughout the southwestern United States, including California, Utah, Arizona, and Nevada. In California, this species typically occurs in scrub habitat throughout the Transverse Ranges.

*Distribution in the Study Area:* Although there are no known records from the Study Area, the Study Area is located within the known geographic distribution for this species. Suitable habitat occurs within the upper terrace located in Reach 4 of the SCR-3 Project site, the toes of the existing levee structures, and within the adjacent Santa Clara River.

*Habitat and Habitat Associations:* The Santa Monica Mountains timema occurs in a variety of habitats where adequate food resources and egg deposit sites are present.

*Natural History:* The Santa Monica Mountains timema is a member of the order Phasmatodea, or “walking sticks.” All phasmids are relatively large, elongated insects whose bodies are often modified to resemble vegetation. Females of this order, which are usually significantly larger than males, lay eggs individually, either sticking them to vegetation or simply depositing them on the ground. Depending on the species, a single female can lay from 100 to 1200 eggs after mating. The eggs are typically camouflaged, resembling plant seeds, and may remain dormant for a full season or more before hatching. The nymphs are born already closely resembling adults. Phasmids exhibit a distinct rocking behavior in which the insects make rhythmic, repetitive side-to-side movements. These movements may function to enhance cryptis by means of resemblance to vegetation in the wind or may allow the insects to visually discriminate objects from their background by their relative positions. All phasmids are herbivorous, feeding mostly on the leaves of trees and shrubs.

*Threats:* There are no identified threats to this species.

### **Monarch butterfly (*Danaus plexippus*)**

*Status:* The monarch butterfly is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

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

*Distribution in the Study Area:* Although not detected, this species may occur intermittently on the Project site; suitable winter roosting habitat is available in the stands of Eucalyptus located on the SCR-3 Project site.

*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 species' distribution is controlled by the distribution of its larval host plant (i.e., various milkweeds, genus *Asclepias*). Eggs are deposited and hatch on the underside of leaves of the

milkweed plant. Upon hatching, the larva will feed upon the fine hairs on the leaves of the plant and stay on the same plant throughout its molting stages. After molting, the larva will leave the milkweed and construct its chrysalis elsewhere. However, once an adult monarch butterfly emerges from the chrysalis, it will soon return to a milkweed plant for foraging and shelter (Urquhart 1987). [USACE and CDFG, 2010]

*Threats:* Threats to this species include development and urbanization.

## **FISH**

### **Arroyo chub (*Gila orcuttii*)**

*Status:* The arroyo chub is a CDFW Species of Special Concern. This species is not federally or State listed as threatened or endangered.

*General Distribution:* This species occurs within the coastal streams of Ventura, Los Angeles, Orange and San Diego Counties.

*Distribution in the Study Area:* The Study Area is located within the known geographic watershed distribution for this species (CDFW, 2008). Suitable habitat occurs within the active channel(s) of the Santa Clara River when flowing or ponded water is present.

*Habitat and Habitat Associations:* The arroyo chub occurs in slow-moving or backwater sections of warm to cool streams with mud or sand substrates. Spawning occurs in pools or in quiet edge waters (Moyle *et al.*, 1995).

*Natural History:* The arroyo chub is a relatively small, short-lived member of the minnow family (Cyprinidae). This species reaches a maximum length of no more than 3.5 inches and lives no more than four years (McGinnis, 2006). The arroyo chub reaches sexual maturity at one year and spawns more or less continuously from February to August. Algae, insects, and small crustaceans comprise the primary diet of this species.

*Threats:* The primary threat to this species is water management actions leading to stream diversions, stream dewatering, flow fluctuations, and channelization (Stephenson and Calcarone, 1999).

### **Southern steelhead – southern California DPS (*Oncorhynchus mykiss*)**

*Status:* The southern California steelhead Distinct Population Segment (DPS) was listed by the NMFS as federally endangered on June 17, 1998 (63 FR 32996-32998). The most recent critical habitat was designated in September 2005. This taxon is also considered a California Species of Special Concern.

*General Distribution:* The southern California steelhead DPS occurs in coastal streams from the Santa Maria River south to the U.S.-Mexican border (NMFS, 2002). The primary drainages that support steelhead runs in this region include the Santa Maria River, Santa Ynez River, Gaviota Creek, the Ventura River, the Santa Clara River, Malibu Creek, San Mateo Creek, and Topanga Creek.

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*Distribution in the Study Area:* This species was not documented within the Study Area during the recent surveys. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present).

*Habitat and Habitat Associations:* The habitat requirements for steelhead in freshwater streams are often dictated by life history stages (Cederholm and Martin, 1983; 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, 2007).

*Natural History:* The southern steelhead (*Oncorhynchus mykiss*) was listed as endangered under the federal Endangered Species Act (ESA) on August 18, 1997. 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 (62 FR 43937–43954).

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 in excess of 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).

**Santa Ana sucker (*Catostomus santaanae*)**

*Status:* The Santa Ana sucker is federally listed as threatened and is a CDFW Species of Special Concern.

*General Distribution:* The Santa Ana sucker historically occurred in small, shallow, low-elevation streams in the Los Angeles, San Gabriel, and Santa Ana River systems (Swift *et al.*, 1993). They also historically occurred in the upper Santa Ana River, on Cajon and City Creeks in the foothills of the San Bernardino Mountains, and in Santiago Creek in the foothills of the Santa Ana Mountains (Moyle *et al.*, 1995). Currently, the Santa Ana sucker is restricted to 3 noncontiguous populations: the lower Big Tujunga Creek, the East, West and North Forks of the San Gabriel River and the lower and middle Santa Ana River (USFWS, 2000). Introduced populations are present in the Santa Clara River, Sespe Creek, Piru Creek, and San Francisquito Creek.

*Distribution in the Study Area:* This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula and Sespe Creeks. Currently the USFWS does not include the Santa Clara River Watershed population in the threatened listing.

*Habitat and Habitat Associations:* Santa Ana suckers typically inhabit small, shallow streams and rivers less than 23 feet (7 meters) wide where water temperature is generally below 72 ° F (22 ° C), and where currents range from swift to sluggish (USFWS, 2000).

*Natural History:* Santa Ana suckers tolerate seasonally turbid water, although they prefer clear water and are often found in pools. Santa Ana suckers change diet with age. Detritus, algae, and diatoms constitute about 98 percent of the diet of young-of-the-year fish. Older fish feed on aquatic insects, fish scales, and fish eggs (RCIP, 2002). Sexual maturity of Santa Ana suckers occurs by the first year, and they continue to spawn to age 2. Neither males nor females show spawning coloration, and the sex ratio is typically 1:1. Spawning takes place in March through early July, peaking in late May through early June. Fecundity is very high (4,000–16,000 eggs depending on the size of the female). Along with a protracted spawning period, high fecundity enables fish to quickly repopulate a stream after a severe flood event. Their life history approach includes explosive breeding and prolonged spawning, conducive to repopulating disturbed habitats (RCIP, 2002). Natural upstream and downstream movement depends on habitat conditions. Flood events contribute to dispersal of the species (RCIP, 2002).

*Threats:* The primary threats that have been identified for this species include stream diversions, stream dewatering, flow fluctuations, and non-native species introduction.

**Owens sucker (*Catostomus fumeiventris*)**

*Status:* Owens sucker is a CDFW Species of Special Concern. This species is not federally or State listed as threatened or endangered.



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*General Distribution:* This species is endemic to the Owens River watershed in southeastern California with other populations known from June Lake (in the Mono Lake Basin), the Santa Clara River (via the Owens aqueduct), and lower Sespe Creek (Moyle, 2002).

*Distribution in the Study Area:* This species was not documented in the Study Area. The Study Area is located within the known geographic watershed distribution for this species (Moyle, 2002). Suitable habitat occurs within the active channel of the Santa Clara River when flowing water is present.

*Habitat and Habitat Associations:* Owens suckers are most abundant in streams with long runs and only a few riffles and substrates of fine materials with only small amounts of gravel. This species has also adapted to living in reservoirs at various depths.

*Natural History:* This species is generally found to spawn in gravelly riffles in tributary streams or in gravelly areas of lakes or ponds. The larvae are most often found to occur within weedy edges and backwaters of streams. Owens sucker most often feeds on algae, detritus and small benthic invertebrates (Natureserve, 2015). This species has been found to hybridize with the Santa Ana sucker populations in the Santa Clara River watershed.

*Threats:* The primary threats that have been identified for this species include stream diversions, stream dewatering, flow fluctuations, and non-native species introduction.

### **Prickly sculpin (*Cottus asper*)**

*Status:* The prickly sculpin is 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 one of the most widely distributed freshwater fishes in California and is found throughout Pacific sloping drainages from Ventura County north to Seward, Alaska.

*Distribution in the Study Area:* Although this species does not occur in the Study Area, prickly sculpin has been recently documented along portions of the lower Santa Clara River (United Water, 2007). The Study Area is within the known geographic watershed distribution for this species (NatureServe, 2015). Suitable habitat may occur within portions of the Santa Clara River adjacent to the SCR-3 Project site when flowing water is present.

*Habitat and Habitat Associations:* Prickly sculpin occur in coastal and inland streams and sandy and rocky shores of lakes. Pools and waters of small to medium rivers with slight currents are typically preferred. This species is generally found on water body bottoms where fine materials, especially sands, dominate (Lee *et al.*, 1980). Spawning occurs in freshwater or intertidal zones that contain flat rocks and moderate currents.

*Natural History:* Prickly sculpins are members of the family Cottidae, which are scaleless, bottom-dwelling fishes with large mouths and dorsally protruding eyes. The freshwater species of sculpin in California are relatively small and occupy a bottom-invertebrate feeding niche (McGinnis, 2006). During the spring spawning season, males demonstrate territorial behavior around depressions that are constructed

underneath rocks. Females are escorted to these sites where they lay up to 11,000 eggs on the underside of the rock (McGinnis, 2006). After hatching, the fry are carried downstream and, after several weeks, they assume an adult body form and settle to the bottom. Upon approaching sexual maturity, they gradually move to preferred spawning sites (McGinnis, 2006). Prickly sculpin typically hide under suitable cover during the day. Feeding actively occurs at night on a variety of bottom-dwelling invertebrates, particularly insect larvae, but may also include salmonid eggs along upper reaches of coastal creeks and rivers (McGinnis, 2006).

*Threats:* Although the prickly sculpin is widespread throughout freshwater habitats in California, its range continues to be reduced by many small barriers placed in coastal creeks and streams. Many of these barriers, such as check dams, may pose an insignificant threat to most fish species, however, the prickly sculpin body and fin complement are not conducive to jumping. Therefore, this species is often deprived of upstream movement beyond such barriers (McGinnis, 2006).

**Partially armored threespine stickleback (*Gasterosteus aculeatus microcephalus*)**

*Status:* The partially armored threespine stickleback is considered a County of Ventura locally important species and is on the CDFW Special Animals list. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* To the north of the Los Angeles basin, this subspecies has been documented in the Santa Clara, Ventura, and Santa Ynez Rivers and in many coastal streams in Santa Barbara and San Luis Obispo County.

*Distribution in the Study Area:* This species was not documented within the Study Area. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when flowing water is present). This species is known to occur upstream in Santa Paula Creek and Sespe Creek.

*Habitat and Habitat Associations:* This freshwater subspecies prefers quiet water, such as pools with abundant aquatic vegetation, backwaters, and stream channel margins where water velocity is low (Moyle *et al.*, 1995). Partially-armored threespine stickleback are most commonly found in low-gradient streams with moderate to low flow rates, although the streams can experience flashy, high-flow events (Baskin, 1974). This subspecies spends its entire life-cycle in freshwater.

*Natural History:* Three subspecies of threespine stickleback (*G. aculeatus*) are currently recognized, including anadromous, partially armored, and unarmored. Partially armored threespine stickleback appears to differ genetically and morphologically from the anadromous and unarmored subspecies. This subspecies spawns between April and July, during which time the male establishes a territory, builds a nest, and approaches females in the vicinity. Receptive females follow the male to the nest, lay eggs, and immediately leave. The male fertilizes the eggs and then vigorously defends his territory from other sticklebacks and predators. Schooling behavior allows for improved feeding efficiency and is common within this subspecies except during breeding (Moyle, 2002). Partially-armored threespine sticklebacks feed primarily on freshwater benthic organisms or organisms that live within the vegetation. Males will also feed on eggs of other sticklebacks during the breeding season (Stephenson and Calcarone, 1999).

*Threats:* The primary threats that have been identified for this subspecies include stream diversions, stream dewatering, flow fluctuations, and channelization (Loe pers. comm., 1997; Mizuno pers. comm., 1997; in Stephenson and Calcarone, 1999).

**Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)**

*Status:* The unarmored threespine stickleback is listed as both state and federally endangered and is a California Fully Protected species.

*General Distribution:* Although originally widespread throughout the Los Angeles Basin, the unarmored threespine stickleback is currently found in few locations which are all situated outside of the Los Angeles River basin (Swift *et al.*, 1993).

*Distribution in the Study Area:* This species was not documented within the Study Area. The Study Area is outside the known geographic distribution for this species; this species is known to occur in the upper Santa Clara River watershed.

*Habitat and Habitat Associations:* Similar to other threespine stickleback species this freshwater subspecies prefers quiet water, such as pools with abundant aquatic vegetation, backwaters, and stream channel margins where water velocity is low (Moyle *et al.*, 1995). Threespine stickleback are most commonly found in low-gradient streams with moderate to low flow rates, although the streams can experience flashy, high-flow events (Baskin, 1974). This subspecies spends its entire life-cycle in freshwater.

*Natural History:* The unarmored threespine stickleback is a small territorial fish that can grow up to a maximum of approximately four inches in length (Moyle, 2002). There are numerous subspecies and morphs of threespine stickleback (*G. aculeatus*) found throughout the Northern Hemisphere, and these are thought to represent a superspecies whose ancestral form is the completely plated morph inhabiting marine waters and some freshwaters (Moyle, 2002; McPhail 2007; Östlund-Nilsson *et al.*, 2007; all as cited in USACE and CDFG, 2010). Threespine sticklebacks lack scales that are common to other fish, and they are related to pipefish and seahorses (ITIS, 2007; as cited in USACE and CDFG, 2010). Their spines and plating are thought to provide protection against piscivorous fish, such as salmonids, by disrupting the capture biomechanics of the predator's jaws, inhibiting capture, and providing increased opportunities for escape (Reimchen 1992, 2000; as cited in USACE and CDFG, 2010). Studies of threespine stickleback systematics suggest that reduction of plating is a common convergent morphological change in freshwater populations; many such populations colonized inland streams and lakes after the Pleistocene (ice-age) glacial retreat (O'Reilly *et al.*, 1993; Orti *et al.*, 1994; all as cited in USACE and CDFG, 2010). The USFWS (1985; as cited in USACE and CDFG, 2010) notes that the unarmored threespine stickleback can be found in all areas of streams, but they prefer slow-moving and standing water or locations behind obstructions, at the edge of streams, or in vegetation in faster moving water. Similar to other threespine stickleback species, male unarmored threespine sticklebacks create a nest in slow-moving water, by gluing together bits of vegetation, such as grass and sticks, using a kidney-secreted protein, and will vigorously defend the established nest territory. After egg fertilization, the male will care for and protect the eggs until the young leave. The male unarmored threespine stickleback will fan the eggs with his pectoral fins, helping to

ensure proper development of the embryos. The amount of suitable breeding habitat may be a limiting factor in the population of the unarmored threespine stickleback (Moyle, 2002; as cited in USACE and CDFG, 2010). The unarmored threespine stickleback lives for about one year, and few if any survive to breed again (USFWS, 1985; ESIS, 1998; as cited in USACE and CDFG, 2010).

*Threats:* The primary threats that have been identified for this subspecies include stream diversions, stream dewatering, flow fluctuations, and channelization (Loe pers. comm., 1997; Mizuno pers. comm., 1997; In Stephenson and Calcarone, 1999; all as cited in USACE and CDFG, 2010).

## **AMPHIBIANS**

### **Arboreal salamander (*Aneides lugubris*)**

*Status:* The arboreal salamander is considered a County of Ventura locally important species. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This species occurs along the Coast Ranges from Humboldt County south to the Mexican border. Populations are also known from South Farallon, Año Nuevo, and Santa Catalina Islands, and several islands within San Francisco Bay (CDFW, 2008).

*Distribution in the Study Area:* Although there are no known records from the Study Area, the Study Area is located within the known geographic distribution for this species (CDFW, 2008). Limited suitable habitat occurs within the Study Area.

*Habitat and Habitat Associations:* The arboreal salamander occurs primarily in valley-foothill hardwood, valley-foothill hardwood-conifer, and mixed conifer habitats. This species is also found in chaparral communities in southern California.

*Natural History:* The arboreal salamander is one of four western species of the genus *Aneides*, representing the climbing salamanders (Stebbins, 2003). Arboreal salamanders are characterized by prominent jaw muscles, particularly in males, that give the head a triangular shape. Additionally, members of this genus have developed distinct adaptations for climbing, including well-developed limbs; long, somewhat truncate toes; and, rounded, somewhat prehensile tails (Stebbins, 2003). This species is inactive during periods of cold temperatures or hot, dry weather when it will retreat to moist, natural or human-made refuges, including rodent burrows, seepages, rock fissures, mine shafts, caves, spring boxes, water tanks, and wells (CDFW, 2008). Otherwise, arboreal salamanders are nocturnally active from October to May (CDFW, 2008). Eggs are brooded in tree hollows, logs, and on the ground in summer and typically hatch from August to September (Stebbins, 2003). The primary diet of this species consists of arthropods, especially beetles, caterpillars, sow bugs, centipedes, and ants (Zweifel, 1949). Other food sources that have been noted include fungi and slender salamanders (Miller, 1944; Stebbins, 1951).

*Threats:* The major threat identified for this species is the loss of large oaks used for nesting and aestivation (NatureServe, 2015).

**Western spadefoot (*Spea hammondi*)**

*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; all as cited in USACE and CDFG, 2010).

*Distribution in the Study Area:* There are no known records for this species in the Study Area or surrounding areas and the nearest CNDDDB record for this species occurs approximately 19 miles to the northeast in the vicinity of Happy Camp Canyon Regional Park. The Study Area is located within the known geographic distribution for this species; suitable habitat does occur within the Study Area. All areas of suitable habitat, although marginal, should be considered potentially occupied.

*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; as cited in USACE and CDFG, 2010). 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; as cited in USACE and CDFG, 2010).

*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; Storey *et al.*, 1999; all as cited in USACE and CDFG, 2010). The species aestivates in upland habitats near potential breeding sites in burrows approximately one meter in depth (Stebbins, 1972) 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 (Stebbins, 1972; Morey and Guinn, 1992; Jennings and Hayes, 1994; Holland and Goodman, 1998; all as cited in USACE and CDFG, 2010).

Eggs are deposited in irregular small clusters attached to vegetation or debris (Storer, 1925; as cited in USACE and CDFG, 2010) in shallow temporary pools or sometimes ephemeral stream courses (Stebbins, 1985; Jennings and Hayes, 1994; all as cited in USACE and CDFG, 2010) 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 CDFG, 2010), but may last up to 11 weeks (Burgess, 1950; Feaver, 1971; Jennings and Hayes, 1994; all as cited in USACE and CDFG, 2010).

Western spadefoot toads likely do not move far from their breeding pool during the year (Zeiner *et al.*, 1988; as cited in USACE and CDFG, 2010), 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, 2015).

*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.

## REPTILES

### **Southwestern pond turtle (*Actinemys pallida*)**

*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 subspecies occurs from northwestern Baja California north through western California to the central region of the state, where it intergrades with the northwestern pond turtle (*C. m. marmorata*) (Seeliger, 1945; Bury, 1970).

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Santa Clara River (during periods when ponded/flowing water is present).

*Habitat and Habitat Associations:* Southwestern 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 southwestern 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).

### **Silvery 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

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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.

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area. The Study Area is located within the known geographic distribution for this widespread species and suitable habitat occurs throughout the Study Area. There are multiple CNDDDB records for this species approximately 2.5 miles south.

*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 (Lind, 1998a). Potential threats to local populations may include wildfires that destroy the desert shrub with which the subspecies is associated.

### **Coastal western whiptail (*Aspidoscelis tigris stejnegeri*)**

*Status:* The coastal western whiptail is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This subspecies is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges. Its range extends north into Ventura County and south to Baja California.

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this widespread species. Suitable habitat occurs throughout the Study Area. The CNDDDB reports an occurrence of this species approximately 6 miles north of the Study Area.

*Habitat and Habitat Associations:* The coastal western whiptail occurs in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, mixed conifer, pine-juniper, chamise-redshank chaparral, mixed chaparral, desert scrub, desert wash, alkali scrub, and annual grasslands. This species is most commonly associated with areas of dense vegetation, but are also found around sandy areas along gravelly arroyos or washes (Stebbins, 2003).

*Natural History:* The coastal western whiptail is a subspecies of the western whiptail (*A. tigris*). Members of this species are distinctly characterized by a jerking gait and nearly constant mobility when active. The reproductive season for western whiptails generally occurs between May and August; however, this may vary depending on local conditions. It has been reported that whiptails in the southern California desert regions may atypically lay more than one clutch of eggs per year (Pianka, 1970). Whiptails forage actively on the ground hunting a wide variety of ground-dwelling invertebrates, including grasshopper, ants, beetles, termites, and spiders (Stebbins, 2003). This diet may change seasonally to reflect the abundance of prey that is available (Vitt and Ohmart, 1977). Most activities occur in the morning, except on cloudy days when activities may last throughout the day (Vitt and Ohmart, 1977).

*Threats to Species:* There are no identified threats to this species.

**Coast (San Diego) horned lizard (*Phrynosoma blainvillii*)**

*Status:* The coast (San Diego) 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 (San Diego) 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).

*Distribution in the Study Area:* A juvenile coast horned lizard was observed within the dry, sandy areas of the Santa Clara River channel, north of the weir field in Reach 2, during surveys conducted in 2013. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within the Study Area.

*Habitat and Habitat Associations:* The coast (San Diego) 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 *Messor* spp.) are present.

*Natural History:* The coast (San Diego) 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 (San Diego) 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



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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 (San Diego) 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.

### **Coast patch-nosed snake (*Salvadora hexalepsis virgultea*)**

*Status:* The coast patch-nosed snake is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* The coast patch-nosed snake occurs from near Creston in San Luis Obispo County south, primarily on the coastal side of the mountains, to Baja California (Jennings and Hayes, 1994).

*Distribution in the Study Area:* Although there are no known records from the Study Area, the Study Area is located within the known geographic distribution for this subspecies (CDFW, 2008). Suitable habitat occurs within the Study Area.

*Habitat and Habitat Associations:* This subspecies prefers coastal sage scrub and chaparral habitats and seems to strictly require at least a low shrub structure of minimum density (Jennings and Hays, 1994). Habitat selection is also closely linked to the presence of whiptail lizards (*Aspidoscelis* spp.), their primary prey source, and the presence of small, abandoned mammal burrows used as overwintering sites (Stephenson and Calcarone, 1999).

*Natural History:* The coast patch-nosed snake is one of five subspecies of western patch-nosed snake (*S. hexalepsis*), characterized as slim, fast, chiefly diurnal, with broad longitudinally striped patterns and generally smooth scales (Stebbins, 2003). All western patch-nosed snakes mate between April and June and typically lay one clutch of four to ten eggs (Stebbins, 2003; Stephenson and Calcarone, 1999). Hatchlings usually emerge in the late summer. Western patch-nosed snakes are normally active in spring and early summer, with the greatest activity occurring between May and June (Zeiner *et al.*, 1988). Members of the species have been observed emerging from overwintering sites in March and returning in October (Stephenson and Calcarone, 1999). However, this species may be active year-round in southern California during mild to warm years (Jennings and Hayes, 1994). The coast patch-nosed snake is diurnal, whereas in summer, activities become bimodal with a primary peak in late morning and a secondary peak

in late afternoon. This pattern is likely related to the emergence interval of whiptail lizards, a major prey source (Stephenson and Calcarone, 1999). Otherwise, patch-nosed snakes appear to be broad generalists in their diet and opportunistic predators (Stebbins, 2003).

*Threats:* It has been estimated that at least twenty percent of the habitat historically available to coast patch-nosed snakes is no longer suitable, and the actual figure may be much higher (Jennings and Hayes, 1994). The primary reason for this decline has been attributed to habitat type conversion as a result of development and repeated wildland fire (Jennings and Hayes, 1994; Loe pers. comm. [as in Stephenson and Calcarone, 1999]).

### **Two-striped garter snake (*Thamnophis hammondi*)**

*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).

*Distribution in the Study Area:* There are no known records for this species in the Study Area; the nearest CNDDDB record for this species occurs approximately 7 miles to the north in the vicinity of the Ventura River. The Study Area is located within the known geographic distribution for this species. Pockets of suitable habitat occur within the limited perennial pool habitats in the Study Area; suitable habitat is present throughout the Santa Clara River in the Study Area when flows or ponded water is present.

*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).

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*Threats:* Lind (1998b) noted that 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.

### **South coast garter snake (*Thamnophis sirtalis* ssp.)**

*Status:* The south coast garter snake is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* The garter snake has the northernmost range of any reptile in North America, and is wide ranging and locally abundant. Natural history records for the south coast garter snake in California include sightings from Santa Clara River Valley (Ventura County) south to San Pasqual (San Diego County) (NatureServe, 2015). South coast garter snakes are endemic to southern California's coastal plain and found primarily between sea level and 800 meters (2,625 feet) AMSL (NatureServe, 2015). The south coast garter snake has a small range along the coast of southern California.

*Distribution in the Study Area:* There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Pockets of suitable habitat occur within the limited perennial pool habitats in the Study Area; suitable habitat is present throughout the Santa Clara River in the Study Area when flows are present. The CNDDDB reports an occurrence of this species approximately 7 miles upstream just south of the Santa Paula area.

*Habitat and Habitat Associations:* This garter snake is generally found in areas along permanent and semi-permanent sources of water (Zeiner et al, 1988; as cited in USACE and CDFG, 2010)

*Natural History:* These diurnal snakes are most active in the early morning and late afternoon in the summer and in midday in cooler times (Zeiner *et al.*, 1988; as cited in USACE and CDFG, 2010). This garter snake forages on land and in quiet pools of water and preys on slugs, earthworms, leeches, small fish, tadpoles, insects, small mammals and birds, and lizards (Jennings and Hayes, 1994; Zeiner *et al.*, 1988; all as cited in USACE and CDFG, 2010). Garter snakes generally retreat to communal hibernation burrows in October (Jennings and Hayes, 1994; as cited in USACE and CDFG, 2010). Occasionally, on warmer winter days, the snakes will emerge from hibernation and bask in the sun. Common garter snakes of southern California in higher elevations, inland, and in colder areas hardly emerge from their hibernation (Zeiner *et al.*, 1988; as cited in USACE and CDFG, 2010). Hibernation lasts until March. Males emerge first and prepare for mating.

As of the 1990s, the south coast garter snake was extinct from 18 historical localities and endangered in 24 more (Jennings and Hayes, 1994; as cited in USACE and CDFG, 2010). In addition to the direct loss of habitat, south coast garter snakes are vulnerable to several effects related to urbanization. Development not only directly removes habitat, but urban development also may impede natural movement between habitats (Jennings and Hayes, 1994; as cited in USACE and CDFG, 2010) and habitat quality may be reduced by alteration of channel morphology (NatureServe, 2015).

*Threats:* Primary threats to this species include habitat conversion and degradation resulting from urbanization, construction of reservoirs, and cement-lining of stream channels.

## **BIRDS**

### **Cooper's hawk (*Accipiter 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.

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable nesting and foraging habitat occurs throughout the Study Area.

*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 (Palmer, 1988).

*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).

### **Sharp-shinned hawk (*Accipiter striatus*)**

*Status:* The sharp-shinned 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:* This species breeds from central and western Alaska and the greater portion of Canada south to central and south-central California, central Arizona, New Mexico, Texas, northern parts of the Gulf states, and into Mexico (AOU, 1998). Wintering grounds extend from the southern portions of Canada south throughout the United States and Mexico into Central America. In California, sharp-shinned hawks breed throughout the state, including the northern half of the state, and, to a lesser extent, the mountains of southern California (Small, 1994).

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*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic year-round distribution for this species. Suitable breeding habitat does not occur, however, suitable foraging habitat occurs throughout the Study Area. A review of online eBird data shows an occurrence of this species immediately north of the Study Area at the Buenaventura Golf Course.

*Habitat and Habitat Associations:* In California, this species typically nests in coniferous forests, often within riparian areas or on north-facing slopes (Stephenson and Calcarone, 1999). Where conifers are scarce, cottonwoods, poplars, and other tall riparian trees may be used for nest sites (Bent, 1937). Foraging habitat during the breeding season is essentially the same as that chosen for nesting. During the winter, however, males tend to hunt most frequently among hedgerows, field edges and other ecotonal habitats, while females typically hunt in extensive stands of forest or riparian areas (Meyer, 1987).

*Natural History:* This species is a small hawk with a pronounced size difference among males and females. Although the sexes are alike in color and pattern, the male is often substantially smaller than the female. This size difference is more evident in this species than most other hawks. The sharp-shinned hawk, which is presumed to be serially monogamous, breeds from April through August with peak breeding activity occurring between late May and July. During this period, the male exhibits undulating courtship flights teamed with high bouts of soaring and calling. Once nesting begins, the male brings food to the female and nestlings until they fledge after roughly sixty days. Fledging is timed to coincide with fledging of prey birds, providing a food supply for young, inexperienced hunters (CDFW, 2008). Although small birds comprise the primary source of food, sharp-shinned hawks also take small mammals, reptiles, amphibians, and insects.

*Threats:* The primary threat to this species is the loss of suitable habitat as a result of large stand-replacing fires.

### **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.

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Very limited suitable breeding and foraging habitat occurs throughout the Study Area. The closest CNDDDB record for this species is approximately 6 miles north. There are multiple eBird records for this species approximately 2 miles west in the general vicinity of the Santa Clara River mouth.

*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, 2008). 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.

**Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)**

*Status:* The southern California rufous-crowned sparrow 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:* Rufous-crowned sparrows are year-round residents throughout their range. Historically, four of the subspecies of rufous-crowned sparrow bred in coastal California from Mendocino County south through northwestern Baja California Norte (Thorngate and Parsons, 2005). Southern California rufous-crowned sparrows range from San Luis Obispo County south to San Diego County (Garrett and Dunn, 1981). This subspecies is increasingly restricted due to urbanization and agricultural development in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties (Cornell, 2012).

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding and foraging habitat occurs within the upland terrace in the eastern extent of the Study Area.

*Habitat and Habitat Associations:* Southern California rufous-crowned sparrows typically breed in sparsely vegetated scrubland on hillsides and canyons between 60 and 1400 meters. This subspecies is often found in coastal sage scrub dominated by California sagebrush, but will also utilize coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats (Thorngate and Parsons, 2005). Southern California rufous-crowned sparrows thrive in recently burned habitats and can be found utilizing these open areas for years (Thorngate and Parsons, 2005).

*Natural History:* The southern California rufous-crowned sparrow is one of five subspecies of the rufous-crowned sparrow that occur in the United States. Twelve additional subspecies occur in Mexico (Cornell, 2012). This species nests on the ground and has a typical clutch size of three to four eggs (Thorngate and Parsons, 2005). Nests are well-hidden at the base of bushes, grass tussocks, or overhanging rock concealed by vegetation or rock (Thorngate and Parsons, 2005). This species forages at or near the ground in areas of dense grass or herbaceous cover, and is rarely observed foraging in the open. They glean insects from low shrubs, grasses, and herbaceous vegetation (Thorngate and Parsons, 2005).

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*Threats:* This subspecies is extremely sensitive to edge effects and appears to avoid small fragments of habitat in favor of large tracts away from edges (Thorngate and Parsons, 2005). Southern California rufous-crowned sparrows are threatened by urbanization and agricultural conversion of habitat (Thorngate and Parsons, 2005).

### **Great blue heron (*Ardea herodias*)**

*Status:* The great blue heron is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This species is fairly common all year throughout most of California. Few rookeries are found in southern California, but many are scattered throughout northern California. Knowledge of specific rookery locations is incomplete (Malette, 1972; Belluomini, 1978; Garrett and Dunn, 1981).

*Distribution in the Study Area:* This species was documented in the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable rookery habitat occurs within the western half of the Study Area.

*Habitat and Habitat Associations:* Great blue herons are most commonly found in shallow estuaries and fresh or saline emergent wetlands. However, they also can occur along riverine and rocky marine shores, in croplands, pastures, and in mountains above foothills.

*Natural History:* This species is the largest and most widespread heron in North America. Great blue herons are large, grayish birds with a long “S”-shaped neck, long legs, and a long, thick bill. They are typically distinguishable by a white crown stripe surrounded by a black plume extending from behind the eye to the back of the neck. Great blue herons usually arrive to breeding ground in February and courtship and nest building begin shortly thereafter. Breeding territories are small, usually including only the nest site and immediately surrounding areas (Cottrille and Cottrille, 1958; Mock, 1976). Secluded groves of tall trees near shallow water are preferred for nesting sites. Feeding areas can occur as far as ten miles away and may be defended vigorously, especially during the non-breeding season (Palmer, 1962; Krebs, 1974; Kushlan, 1976). Although this species will occasionally eat small rodents, amphibians, reptiles, insects, and birds, its diet is dominated by fish (nearly 75%) (Cogswell, 1977). When hunting, great blue herons stand motionless, or walk slowly, in shallow water, or less commonly, open fields and grasp prey with their bill, rarely impaling the intended target. This species typically roosts in secluded, tall trees.

*Threats:* This species is sensitive to human disturbance near nests, and probably to pesticides and herbicides in nesting and foraging areas (Jackman and Scott, 1975).

### **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 (County of Riverside, 2008; as cited in USACE and CDFG, 2010). The western subspecies, western burrowing owl, occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama (County of Riverside, 2008; as cited in USACE and CDFG, 2010). 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 (County of Riverside, 2008; as cited in USACE and CDFG, 2010).

*Distribution in the Study Area:* The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within limited portions of the Study Area. There is a 2002 eBird record for this species in the Santa Clara River near the Victoria Avenue Bridge in the western extent of the Study Area; the nearest CNDDDB record for this species occurs approximately 2 miles to the west near McGrath State Beach.

*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; as cited in USACE and CDFG, 2010). 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; as cited in USACE and CDFG, 2010); 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; County of Riverside, 2008; as cited in USACE and CDFG, 2010). 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; as cited in USACE and CDFG, 2010).

*Natural History:* The majority of 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 (County of Riverside, 2008; as cited in USACE and CDFG, 2010). Western burrowing owls occurring in Florida are predominantly non-migratory, as are populations in southern California (Thomsen, 1971; as cited in USACE and CDFG, 2010). Western burrowing owls in northern California are believed to migrate (Coulombe, 1971; as cited in USACE and CDFG, 2010). 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; as cited in USACE and CDFG, 2010).

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 (County of Riverside, 2008; as cited in USACE and CDFG, 2010). Western burrowing owls are primarily crepuscular in their foraging habits



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but hunting has been observed throughout the day (Thomsen 1971; Marti 1974; all as cited in USACE and CDFG, 2010). Insects are often taken during daylight, whereas small mammals are taken more often after dark (County of Riverside, 2008; as cited in USACE and CDFG, 2010).

**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; Zarn 1974; Remsen 1978; as cited in USACE and CDFG, 2010). 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; as cited in USACE and CDFG, 2010).

### **Costa's hummingbird (*Calypte costae*)**

**Status:** The Costa's hummingbird is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

**General Distribution:** This species breeds in central California, southern Nevada, and southwestern Utah south to Santa Barbara Island, Baja California, and offshore islands, southern Arizona, west-central Mexico, and southwestern New Mexico. Wintering populations occur in southern California and southwestern Arizona south to Sinaloa, Mexico (Terres, 1980; AOU, 1998). Costa's hummingbird occurs as a permanent resident in Ventura County (CDFW, 2008).

**Distribution in the Study Area:** This species was documented in the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs throughout the Study Area.

**Habitat and Habitat Associations:** Costa's hummingbird occurs in more arid habitats than other hummingbirds of California, including desert wash, desert riparian edges, coastal scrub, desert scrub, low-elevation chaparral, and palm oases. This species most commonly occurs along canyons and washes when nesting (NatureServe, 2015).

**Natural History:** Costa's hummingbird is the second smallest bird in North America, displaying an iridescent violet crown and gorget down the side of the neck and greenish sides and flanks. This species breeds from March through May in the deserts and from April through July along the coast (CDFW, 2008). As is usual in hummingbirds, all nesting activities are performed by the female. Nests are located in a wide variety of trees, cacti, shrubs, woody forbs, and sometimes vines, often in proximity to conspecific nests (Bent, 1940). Costa's hummingbird feeds on the flower nectar of various herbaceous and woody plants; however, small insects and spiders are also consumed. During the winter, exotic shrubs may become an important food source (Garrett and Dunn, 1981).

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

### **Lawrence's goldfinch (*Carduelis lawrencei*)**

**Status:** Lawrence's goldfinch is a CDFW Special Animal and a USFWS Bird of Conservation Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* Lawrence's goldfinch breeds from the western foothills of the Sierra Nevada and the Coast Ranges in Shasta County south to northern Baja California. The wintering range for this species extends from the coastal slope of the Coast Ranges in southern California to northern Baja California, and from the Lower Colorado River Valley in Needles, California, east to southern Texas, and south to Sonora, Mexico.

*Distribution in the Study Area:* There are multiple eBird records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding may occur when flows are present in the Santa Clara River; foraging habitat occurs throughout the Study Area.

*Habitat and Habitat Associations:* This species breeds in a variety of habitats throughout its range in southern California, including mixed conifer-oak forest, blue oak savannah, pinyon-juniper woodland, chaparral, riparian woodland, and desert oases (Garrett and Dunn, 1981; Lehman, 1994; Roberson and Tenney, 1993; Unitt, 1984). However, it prefers xeric open oak woodland bordering chaparral in the upper foothills. Arid, open woodlands with adjacent bushy areas, such as chaparral or tall weedy fields, characterize typical nesting habitat. This species is often found nesting within proximity to foraging habitat and open water (Davis, 1999).

*Natural History:* This small, conspicuous songbird reaches a height of four to five inches and possesses distinctly bright yellow coloration on its breast and wingbars; however, females are much less distinct. The breeding season for this species begins as early as late May and can last into September with peak activity occurring between late April and August. Nests are typically constructed on the outer branches of trees, particularly oaks (Grinnell and Miller, 1944). Both parents continue to provision the young for five to seven days after fledging, at which time the young join the parents on foraging bouts. Lawrence's goldfinch feeds primarily on seeds of native plant species, particularly fiddleneck (*Amsinckia* spp.) during the spring months and chamise (*Adenostoma fasciculatum*), mistletoe (*Phoradendron* spp.), coffeeberry (*Rhamnus californica*), and annual grasses during other seasons (Davis, 1999). Lawrence's goldfinches often form large flocks, particularly in winter. However, both males and females of this species will rigorously defend territories from conspecific intruders during the breeding season.

*Threats:* Recent survey data (1980-2000) indicate that there has been a substantial, but not significant, decline in populations of this species across its range. Populations in Arizona and California have been reported as significantly declining (Sauer *et al.*, 1996). However, since this species seems to be well adapted to a wide range of woodland habitats and may even thrive, to some extent, from non-intensive human disturbance that increases annual plant populations, there doesn't appear to be a significant problem with this species at this time.

#### **Northern harrier (*Circus cyaneus*)**

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

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*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).

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs throughout the Study Area. There are multiple eBird records for this species approximately 2 miles west near the mouth of the Santa Clara River.

*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, 2010). 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 (CPIF, 2000). The breeding season for this species typically occurs between March – July. 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 (CPIF, 2000). 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 (CPIF, 2000).

### **Yellow warbler (*Dendroica petechia brewsteri*)**

*Status:* The yellow warbler is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* The breeding range for yellow warblers of the yellow group of subspecies includes the Pacific coast from the northern limits of the boreal forests in Alaska and Canada south to the southern United States and northern Baja California. The winter range extends from the coasts of northern Mexico to northern South America (Lowther *et al.*, 1999). Although this species is primarily a summer resident, some small winter populations remain in the lowlands of southern California (Garrett and Dunn, 1981).

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat occurs in the Study Area.

*Habitat and Habitat Associations:* In southern California, this species breeds in riparian woodlands situated within lowlands and canyons (Garrett and Dunn, 1981; Lehman, 1994; Roberson and Tenney, 1993; Unitt,

1984). Suitable habitat typically consists of riparian forests containing sycamores, cottonwoods, willows, and/or alders (Stephenson and Calcarone, 1999).

*Natural History:* There is a considerable morphological variation within the *D. petechia* species. Of the three recognized groups of subspecies, only the “yellow” group breeds in North America. The “yellow” group is further divided into nine subspecies, which are distinguished by slight differences in plumage color and patterns of breast streaking in males (Lowther *et al.*, 1999). Yellow warblers migrate annually between breeding grounds in North America and wintering grounds in the neotropics and are highly territorial on both breeding and wintering grounds (Lowther *et al.*, 1999). During migration, yellow warblers form flocks and will often join with flocks of other species, including warblers, vireos, and flycatchers. The primary diet of yellow warblers consists of arthropods, such as bees, wasps, caterpillars, flies, beetles, and true bugs, which are usually gleaned from leaf surfaces; however, this subspecies will occasionally sally to capture prey in flight. Males typically forage higher in trees than females (Lowther *et al.*, 1999).

*Threats:* Nest parasitism by brown-headed cowbird (*Malothrus ater*) has been implicated as a major cause of population declines of yellow warblers in southern California (Garrett and Dunn; 1981; Stephenson and Calcarone, 1999; Unitt, 1984).

#### **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).

*Distribution in the Project Areas:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and limited foraging habitat occurs in the Study Area.

*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, 2008). 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.

**Southwestern willow flycatcher (*Empidonax traillii extimus*)**

*Status:* The southwestern willow flycatcher is federally and state listed as endangered.

*General Distribution:* The southwestern willow flycatcher has a known United States breeding range in six states: Arizona, New Mexico, California, southwestern Colorado, extreme southern portions of Nevada and Utah, and, possibly, western Texas. In California, its breeding range extends from the Mexican border north and inland to the City of Independence in the Owens Valley east of the Sierra Nevada, to the South Fork Kern River in the San Joaquin Valley and coastally to the Santa Ynez River in Santa Barbara County (Craig and Williams 1998; as cited in USACE and CDFG, 2010). The southwestern willow flycatcher was formerly a common summer resident throughout California, but has been extirpated from most of its historic breeding range in California.

*Distribution in the Study Area:* There are no known records for this species in the Study Area; critical habitat for this species is mapped within the Study Area. The nearest CNDDDB record for this species occurs approximately 8.5 miles upstream in the Santa Clara River near the Santa Paula area. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat occurs throughout the Study Area.

*Habitat and Habitat Associations:* The southwestern willow flycatcher is a riparian-obligate species restricted to complex streamside vegetation. Four general habitat types are used by the southwestern willow flycatcher at its breeding sites: monotypic high-elevation willow; exotic monotypes (e.g., dense stands of tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolius*)), especially in the desert southwest; native broadleaf-dominated riparian forest; and mixed native/exotic forests (Sogge *et al.*, 1997; as cited in USACE and CDFG, 2010). Of these, native broadleaf-dominated and mixed native/exotic are the primary habitats used by southwestern willow flycatcher in California. The native broadleaf-dominated habitat is composed of a single species, such as Goodding's or other willow (*Salix* spp.) species, or a mixture of broadleaf trees and shrubs, including cottonwood (*Populus* spp.), willow, box elder (*Acer negundo*), ash (*Fraxinus* spp.), and alder (*Alnus* spp.). Stands are usually three to 15 meters (10 to 50 feet) in height and are characterized by trees of different size classes, yielding multiple layers of canopy (Sogge *et al.*, 1997; as cited in USACE and CDFG, 2010).

*Natural History:* Willow flycatchers are late spring migrants and have a breeding season of three months or less (Sedgwick 2000; as cited in USACE and CDFG, 2010). The earliest spring arrival of the willow flycatcher in southern California is typically between late April and early May. When a willow flycatcher is observed in southern California after about June 22, or if nesting activity is observed, it can be concluded that the individual is *E. t. extimus* (southwestern willow flycatcher). By this date, most migrant willow flycatchers have passed through southern California; however, migrant willow flycatchers may again be observed—virtually always away from the coast—in late July as they pass through the region heading south to their wintering area (Sogge *et al.* 1997; as cited in USACE and CDFG, 2010).

Breeding territory sizes of the southwestern willow flycatcher vary greatly in relation to population density, habitat quality, and nesting stage (USFWS 2002; as cited in USACE and CDFG, 2010). The observed range of territory sizes is 0.1 to 2.30 hectares (0.26 to 5.70 acres), with most in the range of 0.2 to 0.5 hectares (0.5 to 1.2 acres) (USFWS 2002; as cited in USACE and CDFG, 2010). Clutches of two to four eggs are laid in the third week in June, with fledglings first appearing in mid-July (Sanders and Flett 1989; as cited in USACE and CDFG, 2010). Fledglings stay close to the nest and to each other for three to five days after leaving the nest and stay in the area for a minimum of 14 to 15 days (Sogge *et al.* 1997; as cited in USACE and CDFG, 2010).

*Threats:* The decline of southwestern willow flycatchers is primarily due to loss, fragmentation, and degradation of suitable riparian habitat resulting from urbanization, recreation, water diversion and impoundments, channelization, invasive plant species, overgrazing by livestock, and conversion of riparian habitat to agricultural land (USFWS, 2002; Sedgwick, 2000; all as cited in USACE and CDFG, 2010). Channelization, bank stabilization, levees, and other flow control structures, surface water diversions, and groundwater pumping for agricultural, industrial, and municipal uses are major factors in the deterioration of suitable southwestern willow flycatcher habitat.

#### **California horned lark (*Eremophila alpestris*)**

*Status:* The California horned lark 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:* Widespread distribution within open habitats in North America and a year-round resident of southern California.

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable foraging habitat occurs within the upland terrace in the eastern extent of the Study Area.

*Habitat and Habitat Associations:* Occurs in open habitats, forages in bare dirt in short and/or sparse grassland and areas of scattered shrubs.

*Natural History:* The California horned lark generally builds grass-lined nests within depressions on the ground. Forages for primarily insects, snails, and spiders but will adapt to grass and forb seeds depending on the season. After breeding this species often forms large flocks that forage and roost together.

*Threats:* There are no persistent threats identified for this species; however, eggs and nestlings are subject to predation from mammals and snakes due to the location of the nest on the ground.

#### **Merlin (*Falco columbarius*)**

*Status:* The merlin 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:* In North America, this species breeds from the northward tree limit in Alaska and Canada southward to southern Alaska, Oregon, Idaho, South Dakota, the northern Great Lakes region,

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New York, Maine, and Nova Scotia. Breeding does not occur in California; however, this species does occur in most of the western half of the state below roughly 4000 feet through the winter season (September to May) (CDFW, 2008).

*Distribution in the Study Area:* There are no known records for this species in the Study Area or surrounding areas. This species is a winter resident that does not breed in CA; the Study Area is located within the known geographic winter distribution for this species. Suitable foraging habitat occurs throughout the Study Area. There is a 2009 eBird record for this species just north of the Study Area at Buenaventura Golf Course.

*Habitat and Habitat Associations:* The merlin occurs in a wide variety of habitats, including marshes, deserts, seacoasts, open woodlands, fields, and communities in early successional stages (Garrett and Dunn, 1981).

*Natural History:* The merlin is a small, averaging twelve inches in length, member of the falcon family (Falconidae) with a long tail and long, pointed wings. This species winters in California from September to May and wanders, but does not apparently defend, foraging territories throughout the winter range (Becker and Sieg, 1987; Warkington and Oliphant, 1990; Sodhi and Oliphant, 1992). Merlins primarily prey on small birds, which are captured on the ground or in the air, after direct pursuit (CDFW, 2008). Small mammals and insects are also consumed, the latter of which may be taken while young merlins are developing their predatory skills.

*Threats:* There are no persistent threats identified for this species; however, because merlins feed primarily on birds, numbers have been likely reduced due to pesticide use.

### **Yellow-breasted chat (*Icteria virens*)**

*Status:* The yellow-breasted chat is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* Although this species is a widespread summer resident in eastern North America, its distribution is much more fragmented in the west. In California, yellow-breasted chat primarily occurs in the northern portion of the state and is considered scarce in the central and southern portions.

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat exist throughout the Study Area.

*Habitat and Habitat Associations:* In southern California, this species utilizes dense riparian thickets and brushy tangles near watercourses for breeding (Garrett and Dunn, 1981). Similar habitat is used during migration (Dunn and Garrett, 1997).

*Natural History:* The yellow-breasted chat is the largest member of the warbler family (Parulidae). Its yellow throat and breast, olive underparts and white spectacles distinguish this species from other similar birds. The yellow-breasted chat breeds in April or May through August. Females initiate nest construction,

which begins shortly after pair formation, above ground in dense shrubs along a river or stream. Both parents tend to nestlings until they fledge at roughly nine days (Stephenson and Calcarone, 1999). This species feeds primarily on insects and spiders that are gleaned from the foliage of low trees and shrubs; however, berries and other fruits are also consumed (CDFW, 2008).

*Threats:* The loss and degradation of riparian habitat have resulted in a marked decline of breeding populations of yellow-breasted chat in California. Nest parasitism by brown-headed cowbird (*Molothrus ater*) has also contributed to declines (Gaines, 1974; Remsen, 1978).

**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.

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat exist throughout the Study Area.

*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 foliated trees or shrubs (Miller, 1931; 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.



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*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).

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable foraging habitat occurs throughout the Study Area. There are multiple eBird records approximately 2 miles west within the general vicinity of the Santa Clara River mouth.

*Habitat and Habitat Associations:* This species most commonly occurs along rivers, lakes, reservoirs, and sea coasts, often crossing land between bodies of water (AOU, 1998). 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.

*Threats:* Osprey has declined due to widespread destruction of coastal saltmarsh.

### **Allen's hummingbird (*Selasphorus sasin*)**

*Status:* The Allen's hummingbird is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This species is a permanent resident in Ventura County. It also occurs as a common summer resident and migrant along much of the California coast.

*Distribution in the Study Area:* This species was documented within the Study Area during surveys conducted in 2013/14. The Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat exist throughout the Study Area.

*Habitat and Habitat Associations:* Breeding for this species most commonly occurs in coastal scrub, valley and foothill hardwood forests, valley and foothill riparian forests, and urban habitats. Allen's hummingbird also occurs in a variety of woodland and scrub habitats as a migrant (CDFW, 2008).

*Natural History:* This species is a small hummingbird with a green back and crown and distinctive rufous markings on the flanks and tail. The Allen's hummingbird often attaches its nest to more than one lateral support on eucalyptus, juniper, willow, other trees, vines, shrubs, or ferns (CDFW, 2008). Breeding occurs from mid-February through early August with peak activity occurring in April. Large mating territories are rigorously defended as are smaller feeding territories (Legg and Pitelka, 1956). The primary diet of this species consists of nectar taken from a variety of herbaceous and woody flowering plants; however, small insects and spiders may also be consumed (CDFW, 2008).

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

**Hermit warbler (*Setophaga occidentalis*)**

*Status:* The Allen's hummingbird is a CDFW Special Animal. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This species is a permanent resident in Ventura County. It also occurs as a common summer resident and migrant along much of the California coast.

*Distribution in the Study Area:* This species was documented immediately upstream of the Study Area during surveys conducted in 2013/14 and is assumed to be present in the Study Area as a migrant. The Study Area is outside the known breeding geographic distribution for this species; suitable foraging habitat occurs throughout the Study Area.

*Habitat and Habitat Associations:* Breeding for this species most commonly occurs in coastal scrub, valley and foothill hardwood forests, valley and foothill riparian forests, and urban habitats. Allen's hummingbird also occurs in a variety of woodland and scrub habitats as a migrant (CDFW, 2008).

*Natural History:* This species is a small hummingbird with a green back and crown and distinctive rufous markings on the flanks and tail. The Allen's hummingbird often attaches its nest to more than one lateral support on eucalyptus, juniper, willow, other trees, vines, shrubs, or ferns (CDFW, 2008). Breeding occurs from mid-February through early August with peak activity occurring in April. Large mating territories are rigorously defended as are smaller feeding territories (Legg and Pitelka, 1956). The primary diet of this species consists of nectar taken from a variety of herbaceous and woody flowering plants; however, small insects and spiders may also be consumed (CDFW, 2008).

**Least Bell's vireo (*Vireo bellii pusillus*)**

*Status:* The least Bell's vireo was listed as federally endangered by the USFWS on May 2, 1986 (51 FR 16474-16482). Critical habitat was designated on February 2, 1994 (59 FR 4845-4867). This taxon is also listed as State endangered and considered a USFWS Bird of Conservation Concern.

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*General Distribution:* The least Bell's vireo was historically widespread in riparian woodlands of the Central Valley and low-elevation riverine valleys of California and northern Baja California. However, over 95 percent of historic riparian habitat has been lost throughout its former range, which may have accounted for 60 to 80 percent of the original population throughout the state of California (USFWS, 1986). The current breeding distribution for this subspecies in California is restricted to Kern, San Diego, San Bernardino, Riverside, Ventura, Los Angeles, Santa Barbara, and Imperial Counties.

*Distribution in the Study Area:* This species was detected during recent focused surveys in 2013 and 2015 and during general surveys in 2014. The Study Area is located within the known geographic breeding distribution for this subspecies; suitable habitat occurs throughout the Study Area.

*Habitat and Habitat Associations:* During the breeding season, least Bell's vireo is a low-elevation riparian obligate that inhabits dense, willow-dominated habitats with lush understory vegetation and in the immediate vicinity of water. Most areas that support viable populations are in early stages of succession where most woody vegetation is between five and ten years old (Franzeb, 1989; Gray and Greaves, 1984).

*Natural History:* The least Bell's vireo is one of four recognized subspecies of Bell's vireo (*V. bellii*) and is the western-most occurring subspecies, breeding entirely within California and northern Baja California. This subspecies is a small vireo with a short, straight bill and plumage varying from drab gray to green above and white to yellow below. The breeding season for least Bell's vireo begins with males arriving at breeding sites to establish territories, typically by late March. Females settle on male territories within two days of arriving to breeding sites and courtship begins immediately, lasting for 1-2 days before a nest site is selected and both birds construct the nest. Both sexes brood and feed the young. After the breeding season is complete, the least Bell's vireo leaves its breeding range to winter in Baja California. This subspecies typically forages in riparian habitat, feeding primarily on small insects and spiders (Chapin, 1925). Feeding will also occasionally occur in oak woodlands and adjacent chaparral habitats (Salata, 1983).

*Threats:* The primary threats that have been identified for this subspecies include the loss of lowland riparian habitat and nest parasitism by the brown-headed cowbird (USFWS, 1998)

## 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).

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited roosting habitat is present in the Study Area. Suitable foraging habitat occurs throughout the Study Area. There is a historic CNDDDB record approximately 3 miles north.

*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; Tactarian, 2001).

*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 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 with 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 (Brown-Berry, 2002). 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).

**Dulzura pocket mouse (*Chaetodipus californicus femoralis*)**

*Status:* The Dulzura pocket mouse is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* This subspecies occurs in the Sierra Nevada, Coast, Transverse, and Peninsular Ranges of southern California and northern Baja California.

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Suitable habitat occurs in discrete portions of the Study Area. The closest CNDDDB record for this species occurs approximately 8 miles north.

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*Habitat and Habitat Associations:* The Dulzura pocket mouse occurs in a wide variety of habitats, including coastal scrub, chaparral, and grasslands, but likely reaches its greatest abundance in edges between grasslands and chaparral.

*Natural History:* The Dulzura pocket mouse is a subspecies of California pocket mouse (*C. californicus*), although the taxonomy is relatively unknown. Similar to all members of the species, the Dulzura pocket mouse is a granivore, feeding mainly on the seeds of annual grasses and forbs. Leafy vegetation and insects are probably consumed seasonally (CDFW, 2008). Water is obtained metabolically from food sources. California pocket mice are nocturnally active, solitary, and display aggressive territorial behavior. Predators include coyotes, bobcats, owls, and snakes (CDFW, 2008).

*Threats:* No persistent threats have been identified for this subspecies.

### **Spotted bat (*Euderma maculatum*)**

*Status:* The spotted bat is a CDFW Species of Special Concern.

*General Distribution:* The spotted bat has been found at a small number of localities, mostly in the foothills, mountains and desert regions of southern California. [CDFW, 2000]

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Limited suitable breeding habitat may occur within the Study Area. Suitable foraging habitat occurs throughout the Study Area.

*Habitat and Habitat Associations:* Habitats occupied include arid deserts, grasslands and mixed conifer forests. Elevational range extends from below sea level in California to above 3000 m (10000 ft) in New Mexico. [CDFW, 2000]

*Natural History:* This bat prefers to roost in rock crevices but is occasionally found in caves and buildings; cliffs provide optimal roosting habitat. Moths are the principal food source of this species (CDFW, 2000). This species feeds in flight, over water, and near the ground, using echolocation to find prey and prefers sites with adequate roosting habitat, such as cliffs.

*Threats:* Threats to the spotted bat may include loss of habitat to development and the use of insecticides.

### **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).

*Distribution in the Study Area:* There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Suitable roosting habitat is present within the Study Area. Suitable foraging habitat occurs throughout the Study Area. The CNDDDB reports a historic occurrence of this species approximately 7 miles north.

*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, 2015).

*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, 2015). Colonies typically consist of less than 100 individuals (NatureServe, 2015). 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).

#### **San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)**

*Status:* The San Diego black-tailed jackrabbit is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* The San Diego black-tailed jackrabbit occurs on the coastal side of the southern California mountains. This subspecies has been recorded on Mt. Pinos and well as in Ventura, Los Angeles, Orange, and San Diego Counties, and into Baja California, Mexico (Hall, 1981).

*Distribution in the Study Area:* Although not detected in the Study Area, this species is known from the Santa Clara River Valley. The Study Area is located within the known geographic distribution for this subspecies; suitable habitat is present throughout the Study Area.

*Habitat and Habitat Associations:* The black-tailed jackrabbit occurs in a variety of open habitats including grasslands, agricultural fields, or sparse coastal sage scrub (Bond, 1977).

*Natural History:* The San Diego black-tailed jackrabbit is one of 17 subspecies of *L. californicus* that occur in the western United States. The San Diego black-tailed jackrabbit and *L. c. deserticola* both occur in southern California (Hall, 1981). The length of the breeding season for the San Diego black-tailed jackrabbit depends upon the severity and length of winter, as this subspecies breeds year-round. Gestation lasts approximately 40 days, and litter size varies depending on environmental conditions (Best, 1996). San Diego black-tailed

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jackrabbits feed on a wide variety of grasses, forbs, and shrubs (Zeiner *et al.*, 1990b). Predators include coyotes, hawks, owls and foxes (Best, 1996).

*Threats to Species:* Urban development and agriculture has reduced the amount of suitable habitat available to this subspecies, and has fragmented available habitat.

### **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 State 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.

*Distribution in the Study Area:* Although not detected in the Study Area, this species is known from the Santa Clara River Valley. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within portions of the Study Area. The closest CNDDDB records for this species occur approximately 13 and 16 miles northwest of the Study Area.

*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 (Lee, 1963; MacMillen, 1964). 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.

### **American badger (*Taxidea taxus*)**

*Status:* The American badger is a CDFW Species of Special Concern. This taxon is not federally or State listed as threatened or endangered.

*General Distribution:* The vast geographic range of the American badger extends as far north as Alberta, Canada and as far south as central Mexico (Hall, 1981). This species occurs in suitable habitat throughout California with the exceptions of the humid coastal forests of Del Norte and Humboldt Counties in the

northwest part of the state (Williams, 1986). The elevation range for this species occurs between below sea level at Death Valley to as high as the Arctic-Alpine Life Zone (Long, 1973).

*Distribution in the Study Area:* There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species. Suitable habitat occurs within portions of the Study Area. The CNDDDB reports multiple occurrences of this species approximately 5 miles upstream in the Santa Paula area.

*Habitat and Habitat Associations:* American badgers exploit a wide variety of open, arid habitats, but are most commonly found in grasslands, savannas, mountain meadows, and open areas of desert scrub (Stephenson and Calcarone, 1999). Basic requirements that have been identified for this species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground (Williams, 1986).

*Natural History:* American badgers are most often solitary animals that are primarily nocturnal, but have been reported occasionally foraging and dispersing during the daytime (Lindzey, 1978; Messick and Hornocker, 1981). This species is active year-round except at higher elevations and latitudes, where winter torpidity is common. During winter, individuals at lower elevations will exhibit reduced surface activity and may remain in a single burrow for days or even weeks (Long, 1973; Messick and Hornocker, 1981). This species is an opportunistic predator feeding on such prey resources as mice, chipmunks, ground squirrels, gophers, rabbits, and kangaroo rats. Reptiles, insects, birds, eggs, and carrion are also consumed (Williams, 1986; Zeiner *et al.*, 1990b). American badgers mate in the summer and early autumn with young born in March and early April (Long, 1973).

*Threats:* This species has experienced large population declines in many areas of southern California and has been steadily decreasing throughout the state over the last century (Williams, 1986). The major cause of mortality to adult badgers is vehicular accidents. Other common threats include habitat conversion to urban and agricultural uses, farming operations, shooting and trapping, poisoning, and reduction of prey base as a result of rodent control activities (Williams, 1986).