Appendix J.

Special-Species Wildlife Species Accounts

Appendix J. Special-Status Wildlife Species Accounts

Federal and State Threatened and Endangered Species

Arroyo Toad (*Bufo californicus*). Federal Status: Endangered; State Status: Special Concern. The arroyo toad is a medium-sized toad, and adults range from 2.2 to 2.6 inches in length (Service 1999). Dorsal coloration ranges from cream to light gray to light greenish-gray. Formerly considered a subspecies of the southwestern toad (*B. microscaphus*), the arroyo toad was elevated to full species status by Gergus (1998).

The distribution of arroyo toads historically extended from the upper Salinas River system in San Luis Obispo County south into coastal Baja California (Jennings and Hayes 1994). Adults are primarily nocturnal and usually active between the first major rains in January and February to early August (Cunningham 1962). After males emerge from the stream terrace over-wintering sites they precede females to breeding pools and call nightly from February or March through July (Holland and Goodman 1998).

Arroyo toads have one of the most specialized breeding habitat requirements of any amphibian in California. Adults require overflow pools adjacent to the inflow channel of streams that are generally 3rd order or greater and generally free of predators. Normally, shallow pools with sandy or gravely bottoms surrounded by little woody vegetation are preferred. Regular disturbance in the form of flooding is required to maintain areas of sparsely vegetated, sandy stream channels and terraces, which are used by adults and subadults for foraging and burrowing (Service 2001). Outside the breeding season, arroyo toads use a wide range of habitats in both upland (to a distance of at least 3,740 feet from the upland-riparian ecotone) and riparian areas (Holland and Sisk 2001). Upland habitats used by arroyo toads include coastal sage scrub, chaparral, oak woodland, grassland, riparian, and agricultural habitats (Griffin 1999, Service 2001).

Arroyo toads typically begin migrating to breeding sites in February or March, and migrations continue through July (Holland and Goodman 1998). Males produce a trilling call from suitable breeding sites along the stream to attract females. When a female approaches, the male clasps the female across the abdomen (amplexus). The female arroyo toad then deposits 2,000 to 10,000 eggs in 2 long strands that are fertilized externally by the amplectic male (Sweet 1991 in Jennings and Hayes 1994). Larvae require 65 to 85 days to complete metamorphosis (Jennings and Hayes 1994, Holland and Goodman 1998), at which time they are approximately 0.5 to 0.9 inches in length (Holland and Goodman 1998). Even newly metamorphic individuals are able to burrow into loose sand. Juveniles initially remain near the natal pool until reaching a length of about 1.2 inches, when they may begin dispersing into adjacent riparian vegetation and become nocturnal (Jennings and Hayes 1994, Holland and Goodman 1998). Sexual

maturity is typically attained in 2 years, though males can reach maturity in one year under favorable environmental conditions (Jennings and Hayes 1994).

Jennings and Hayes (1994) stated that the arroyo toad has been extirpated from 76% of its total historic range in the United States (which is limited to California). They cite loss of habitat to agriculture and urbanization, changes to the hydrological regime in streams and rivers within their historic range, and predation from introduced aquatic species as significant factors in the decline of the arroyo toad. Those and other factors, such as human use and disturbance in and near aquatic habitats (e.g., campgrounds, off-road vehicle use), placer mining, and cattle grazing are threats to remaining populations (Jennings and Hayes 1994). Additionally, fire and drought have produced severe declines in populations that are already stressed (Jennings and Hayes 1994).

Northern Region: This species may occur along Segments 5 and 6 north of the ANF. The CNDDB (2007) lists 2 records of arroyo toad from Little Rock Creek (2001 and 1970), approximately 5 miles east of Segment 6. In addition, there is suitable habitat for arroyo toad in Amargosa Creek along Segment 5, although arroyo toads were not detected during reconnaissance-level surveys of this area. Kentucky Wash along Segments 6 and 11 (between the Vincent Substation and Kentucky Springs) is not likely to support suitable breeding habitat for arroyo toad based on low annual rainfall in the area, the extreme width of the wash, and the lack of riparian indicator plant species within the wash.

Central Region: The arroyo toad is present and was observed during protocol-level surveys (AMEC 2007) and previous surveys by the Service and USFS (SCE 2007) in Alder Creek, near the confluence with Big Tujunga Creek. Additionally, there are CNDDB (2007) records for arroyo toad within Little Rock Creek (2001 and 1970; approximately 5 miles east of Segment 6), the Monte Cristo Campground on Mill Creek (1991; approximately 0.7 miles west of Segment 6), and Big Tujunga Creek within Big Tujunga Canyon (2001; approximately 1 mile southwest of Segment 6).

Suitable breeding habitat for arroyo toad also occurs within and adjacent to Monte Cristo Creek along Segment 6 and the following portions of Segment 11: Big Tujunga Creek, Aliso Creek (near Aliso Canyon Road), North Fork of Mill Creek, and Arroyo Seco Creek. These large drainages contain high-quality habitat for arroyo toad based on the presence of standing water, an open tree canopy, and suitable adjacent upland habitat.

Southern Region: The arroyo toad is unlikely to occur in Eaton Wash along Segment 11 and the San Gabriel River along Segment 8. Extensive urbanization and habitat disturbance in the uplands surrounding Eaton Wash has rendered this habitat unsuitable for arroyo toad. In addition, this species has not been detected in this area, despite heavy visitation within the Eaton Canyon Natural Area. Previously suitable habitat along the San Gabriel River in the Whittier Narrows Recreation Area along Segment 8 is unsuitable due to water diversion projects, habitat disturbance, and urbanization. There are no CNDDB (2007) records of arroyo toad within the Southern Region.

Mountain Yellow-legged Frog (*Rana muscosa*); Federal Status: Endangered (Southern CA DPS only), Forest Service Sensitive; State Status: Special Concern. On the basis of molecular,

morphological, and acoustic evidence, the mountain yellow-legged frog is separated into 2 species: *R. sierrae* in the northern and central Sierra Nevada and *R. muscosa* in the southern Sierra Nevada and Southern California (Vredenburg et al. 2007). The Federal listing of the mountain yellow-legged frog is limited to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only. The Service determined that listing of the Sierra Nevada distinct population segment is "warranted but precluded" (Service 2007).

The mountain yellow-legged frog is 1.5 to 3 inches in length (Jennings and Hayes 1994). In Southern California, only a few populations exist in the San Gabriel, San Jacinto, and San Bernardino Mountains (Backlin et al. 2002). The known elevational range for the species in Southern California is 1,200 to 7,500 feet (Stebbins 1985).

This species is associated with streams, lakes, and ponds in montane, riparian, lodgepole pine (*Pinus contorta*), subalpine conifer, and wet meadow habitat types. Individuals usually crouch on rocks or clumps of grass near water and when disturbed, they dive into water, take refuge under rocks, or rest exposed on the bottom. Less commonly, frogs bury themselves in bottom sediments. During dry conditions, they may enter rodent burrows near water. Breeding and egg-laying in Southern California usually occur from March to August, depending on local conditions (Stebbins 2003). Clusters of up to 500 eggs (usually 200 to 300) are deposited in shallow water and attached to gravel or submerged rocks.

Although this species was historically quite common in Southern California, it has been extirpated from approximately 99% of its range in the San Gabriel, San Bernardino, and San Jacinto Mountains (Jennings and Hayes 1994, Stebbins 2003). Air pollution and predation by non-native fish and bullfrogs are the primary factors contributing to the decline of this species (Stebbins 2003). Factors that have contributed to the decline of other ranid species (e.g., California red-legged frog) such as logging, mining, and habitat conversions, are minor factors contributing to the decline of mountain yellow-legged frogs in Southern California (Service 2002a). In Sequoia National Park, recent declines in this species were attributed to airborne pesticides and a highly infectious and fatal disease (chytridiomycosis) caused by the fungus *Batrachochytrium dendrobatidis* (Fellers et al. 2007). Chytrid fungus and/or pesticides may also have contributed to the decline of mountain yellow-legged frog populations in Southern California.

Northern Region: The mountain yellow-legged frog is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for mountain yellow-legged frogs in the Northern Region.

Central Region: This species is unlikely to occur within the Central Region in the vicinity of the proposed project because it has been extirpated from historically occupied sites. The CNDDB (2007) lists 10 records that represent occurrences that are likely extirpated (M. Jennings, personal communication) and an additional 10 records (1932 to 1970) that have not been re-verified since the original record (CNDDB 2007). Potential habitat for the species was observed in Big Tujunga Creek, Josephine Creek, Clear Creek, Woodwardia Canyon/Dark Canyon, Arroyo Seco Creek, and Eaton Wash along Segment 11 and Big Tujunga Creek, Monte Cristo Creek, Lynx Gulch, Alder Creek, and West Fork San Gabriel River

along Segment 6. These drainages are within the known elevation range of the mountain yellow-legged frog and contain riparian habitat with deep plunge pools, rocks, and logs that serve as refugia.

Southern Region: This species is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for this species in the Southern Region.

California Red-legged Frog (*Rana draytonii*). Federal Status: Threatened; State Status: Special Concern. The California red-legged was formerly considered a subspecies of the northern red-legged frog (*R. aurora aurora*). However, based on molecular genetic evidence, Shaffer et al. (2004) concluded that California red-legged frog should be elevated to full species and assigned the species name *draytonii*. It was listed as "threatened" (Service 1996) based largely on a significant range reduction and continued threats to surviving populations (Miller 1994). Factors related to declines in populations of red-legged frogs include the degradation or loss of habitat attributed to agricultural practices, introduced plants and animals, livestock grazing, mining, water diversions and impoundments, recreation activities, timber harvesting, and urbanization (Service 2002a). In California, more than 90% of the historic wetlands have been lost (Dahl 1990).

Adult California red-legged frogs breed from late November through early May after the onset of warm rains (Storer 1925, Jennings and Hayes 1994). Most larvae metamorphose into juvenile frogs between July and September. Post-metamorphic frogs grow rapidly while feeding on a wide variety of invertebrates including Amphipoda, Isopoda, Orthoptera, Isoptera, Hemiptera, Homoptera, Neuroptera, Coleoptera, Lepidoptera, Diptera, Hymenoptera, Arachnida, and Gastropoda (Hayes and Tennant 1985, Baldwin and Stanford 1987). Adult frogs prey upon a wide variety of species including invertebrates, small fishes, frogs, and small mammals (Hayes and Tennant 1985, Arnold and Halliday 1986).

California red-legged frogs occupy a number of aquatic and terrestrial habitats. Larvae, juveniles, and adult frogs occur in natural lagoons, dune ponds, pools in or near streambeds, within streams, marshlands, sag ponds, springs, human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits containing water, and large reservoirs (Storer 1925, Service 2002a). The key to the presence of California red-legged frogs in these habitats is the presence of a perennial, or near perennial, source of water and the lack of introduced aquatic predators. Among introduced species that prey upon California red-legged frog are crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs, green sunfish, bluegill (*L. macrochirus*), and largemouth (*Micropterus salmoides*) and smallmouth bass (*M. dolomieu*).

If water at least several inches in depth is present, and introduced aquatic predators are rare or absent, then California red-legged frogs may occur. If the aquatic habitat supports introduced aquatic predators, then California red-legged frogs are likely to be eradicated from that site unless nearby breeding habitat devoid of non-native predators is available. Hayes and Jennings (1988) characterize habitats in which the largest densities of red-legged frogs occur as those having pools at least 27 inches deep, with overhanging willows (*Salix* spp.) and an intermixed fringe of narrow-leaved cattails (*Typha latifolia*), tules, or sedges

(*Carex* spp.). In addition to aquatic habitats, juvenile and adult California red-legged frogs use areas of riparian vegetation within a few feet of water. This species also uses small mammal burrows in vegetation, willow root wads, and the undersides of wood material and other debris within the riparian zone.

Radio-telemetry studies conducted in lagoons and the lower reaches of streams along the Central Coast of California indicate that adult red-legged frogs move within the riparian zone to pools in order to hydrate during periods when many reaches of streams are dry (Rathbun et al. 1993). During wet periods, especially during winter and early spring, red-legged frogs can move a mile between aquatic habitats, often crossing inhospitable habitat like roads, open fields, and croplands.

The Service recovery plan for the California red-legged frog identifies 8 "recovery units" that identify geographic areas where recovery efforts will be concentrated (Service 2002b). Core areas were defined within the recovery units to focus conservation actions in areas where restoration is considered most feasible, reestablishment efforts are most likely to be successful, and natural re-colonization is expected to facilitate recovery (Service 2002b).

Northern Region: California red-legged frogs could occur in Amargosa Creek when flowing or standing water is present, but are absent elsewhere within the region due to lack of suitable habitat. The CNDDB (2007) lists one record for California red-legged frog from a pond on Ritter Ranch located approximately 2.4 miles west-northwest of Segment 5 at Amargosa Creek.

Central Region: This species is unlikely to occur within the Central Region. Suitable habitat for the species is present in Big Tujunga Creek, Josephine Creek, Clear Creek, Woodwardia Canyon/Dark Canyon, Arroyo Seco Creek, Eaton Wash, Monte Cristo Creek, Lynx Gulch, Alder Creek, and the West Fork San Gabriel River along Segments 6 and 11. However, the CNDDB (2007) lists no record of California red-legged frog within the project alignments through the ANF. A SCE report (2007) notes an occurrence along Big Tujunga Canyon Road near Segment 11, but this population is presumed extirpated at this location (Service 2004).

Southern Region: California red-legged frogs are absent from the Southern Region. Suitable habitat for this species is present in Eaton Wash along Segment 11 and Tonner Creek and Rio Hondo along Segment 8, but upland habitat and water quality is degraded in these areas. There was no evidence of this species during reconnaissance surveys in 2007 and no CNDDB (2007) or other records for this species in the Southern Region.

Desert Tortoise (*Gopherus agassizii*). Federal Status: Threatened; State Status: State Threatened. The desert tortoise is an herbivore that may attain a length of 9 to 15 inches in carapace length. The tortoise is able to live where ground temperature may exceed 140° F because of its ability to dig burrows and escape intense solar radiation. At least 95% of its life is spent in burrows. The tortoise enters brumation (the reptilian form of hibernation) during the period from September to November and leaves the burrow during the period from February to April. During brumation, the desert tortoise avoids freezing temperatures and is able to endure the lack of forage during winter (Ernst et al. 1994).

The presence of soil suitable for digging burrows is a limiting factor to desert tortoise distribution (Service 1994). Some burrows extend just beyond the shell of the tortoise, while others extend for several feet. A single tortoise may have a dozen or more burrows within its home range, and different tortoises may use these burrows at different times. Desert tortoises inhabit semi-arid grasslands, gravelly desert washes, canyon bottoms, and rocky hillsides (Service 1994).

Diet composition varies throughout the tortoise's range. If winter rainfall is sufficient to germinate annuals, these are consumed when tortoises emerge from winter brumation (Service 1994). Other herbs, grasses, some shrubs, and the new growth of cacti and cacti flowers comprise a major portion of the diet. Common Ravens, Gila monsters (*Heloderma suspectum*), kit foxes (*Vulpes macrotis*), badgers (*Taxidea taxus*), roadrunners (*Geococcyx californianus*), and coyotes (*Canis latrans*) are all natural predators of the desert tortoise. These predators typically prey upon 2- to 3-inch long juveniles, which have a thin, delicate shell (Service 1994).

Plant species play a major role in defining desert tortoise habitat. Creosote bush (*Larrea tridentata*), burrobush (*Ambrosia dumosa*), Mojave yucca (*Yucca schidigera*), and blackbrush (*Coleogyne ramosissima*) generally distinguish desert tortoise habitat. At higher elevations, Joshua tree (*Yucca brevifolia*) and galleta grass (*Pleuraphis rigida*) are common plant indicators (Service 1994).

Northern Region: The desert tortoise is unlikely to occur in the Northern Region. There is suitable habitat for desert tortoise in the vicinity of North Rosamond Avenue, extending northward to the termini of Segments 4 and 10. However, this region is outside the known range of the desert tortoise, there are no CNDDB or other records of this species from the region, and this species was not detected during focused surveys of Segment 10 in 2006.

Central Region: The desert tortoise is absent from the Central Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for desert tortoise in the Central Region.

Southern Region: The desert tortoise is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for desert tortoise in the Southern Region.

California Condor (*Gymnogyps californianus*). Federal Status: Endangered; State Status: Endangered. The California Condor is one of the most endangered birds in the world and the largest of the North American vultures (Snyder and Schmitt 2002). A clutch size of one egg and a minimum of 6 years to reach sexual maturity in the wild make the California Condor dependent on low mortality rates for population sustainability (Wilbur 1973). Its endangerment has been due primarily to excessive mortality caused mainly by poisoning, shooting, and lead exposure (Fry 2004, Pattee et al. 1990, Snyder and Schmitt 2002).

The California Condor is a permanent resident of the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles

County, the Transverse Ranges, Tehachapi Mountains, and southern Sierra Nevada (Polite 2005). The California Condor is not a habitat specialist. Nesting habitats have ranged from scrubby chaparral to forested montane regions subject to winter snowfalls. Typically, the California Condor forages in relatively open grassland regions, where primary foraging areas are separated from the primary nesting areas, necessitating substantial travel (Meretsky and Snyder 1992). The most important habitat requirements are adequate food supplies, open or semi-open habitat where food can be readily found and accessed, and reliable air movements allowing extended soaring flight. California Condors do not build substantial nests of twigs and branches; instead, they typically rely on natural cavities, such as caves in cliffs (Snyder and Schmitt 2002).

California Condors commonly feed in groups and almost exclusively on mammalian carrion. Currently, the California Condor primarily feeds on the carrion of domestic animals, hunter-shot mule deer (*Odocoileus hemionus*), shot or poisoned coyotes, and ground squirrels (*Spermophilus* spp.; Snyder and Schmitt 2002). Condors feed primarily in open grassland habitats, where carcasses of grazing mammals are most abundant and visible (Snyder and Schmitt 2002).

In the 1980s, all condors were brought into captivity and captive breeding populations were established with the goal of restoring wild populations (Woods et al 2007). On 19 April 1987, the last free-ranging California Condor was trapped on the Hudson Ranch in Kern County, California and transported to the San Diego Wild Animal Park where it joined the remaining members of its species (Hendron 1998). Restoration began in 1992 when 2 condors were released at the Sespe Condor Sanctuary in Southern California (Woods et al. 2007). There are currently 148 free-ranging California Condors occurring in North American: 72 in California, 60 in Arizona, and 16 in Baja California (CDFG 2007). Many condors released as part of the California Condor recovery program have been fitted with Geographic Positioning System (GPS) or satellite tags that provide biologists with periodic data on the location of tagged birds. These data show that many condors forage widely in Southern California, including areas in the vicinity of the proposed project.

Northern Region. The California Condor is present within the Northern Region. There is one GPS record of a tagged condor from the foothills of the Sierra Pelona Mountains in the vicinity of Segments 5, 6, and 11 (Service unpublished data). The Northern Region contains suitable foraging habitat and prey (California mule deer; *O. h. californicus*) in the foothills of the San Gabriel Mountains.

Central Region. The California Condor is present within the Central Region. California Condors released as part of the condor recovery program are regularly recorded over the ANF within the proposed project area (R. Posey, personal communication; Service, unpublished data). Additionally, a pair was observed at Eaton Canyon in the San Gabriel Mountains in the early 1900s (Snyder and Snyder 2000). Although outside of the recent breeding range, cliffs within the Central Region may provide nesting habitat for the condor. California mule deer and Nelson's bighorn sheep (*Ovis canadensis nelsoni*) occur in the San Gabriel Mountains and may provide feeding opportunities for the species.

Southern Region. The California Condor is likely to occur within the Southern Region. This region has suitable foraging habitat for the California Condor, and California mule deer are abundant in the Puente and Chino Hills. California Condors released as part of the condor recovery program range widely during foraging trips, and this may include portions of the Puente and Chino Hills.

Bald Eagle *(Haliaeetus leucocephalus).* Federal Status: Delisted; State Status: Endangered, Fully Protected. The Bald Eagle is a large soaring bird of prey. It weighs 10 to 15 pounds and has a body length of 2.7 feet and a wingspan of 7 feet. Females are slightly larger than males, as is the case with most raptors. Past catastrophic declines in Bald Eagle populations have been attributed largely to organochlorine pesticide use, primarily DDT, which reduced reproductive success (Grier 1982). Loss of habitat, human disturbance, severe weather, logging, shooting, industrial pollution, sedimentation, and acid waste also contributed to population declines. The Bald Eagle was historically abundant in California, but its numbers declined to fewer than 30 pairs by 1967, when the species was federally listed as endangered. It was state listed as endangered in 1971. Due to tremendous population recovery, however, the Bald Eagle was downlisted to federally threatened in 1995 and delisted in 2007. The species is still listed as state endangered.

Most of the annual food requirements of Bald Eagles are derived from, or are obtained around, aquatic habitats. The type of food consumed is typically proportional to its availability and most often consists of fish, water birds, and small to medium sized mammals. Consequently, nesting territories are usually near water. In California, Thelander (1973) found that 75% of the nest trees surveyed in 35 nesting territories were within a quarter mile of a body of water.

In Southern California, Bald Eagles primarily winter adjacent to large reservoirs and inland waters (Garrett and Dunn 1981). Individuals have been most frequently observed at Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River (Zeiner et al. 1990). The Bald Eagle is primarily a migrant and wintering species in Southern California, and recent breeding attempts on the mainland south of Santa Barbara County (e.g., Silverwood Lake, Lake Skinner, Lake Perris) have been unsuccessful (Service, unpublished data). Although this species is rare in Southern California (Garrett and Dunn 1981), it has been observed in suitable habitats throughout Los Angeles, Orange, Riverside, and San Bernardino counties. In recent years, Bald Eagles have been detected at the Prado Basin, Lake Skinner, Lake Mathews, Lake Perris, Lake Elsinore, Lake Hemet, and Vail Lake (Dudek and Associates 2000). Up to 20 eagles were reported to occur at Lake Mathews (Garrett and Dunn 1981).

Northern Region: The Bald Eagle is absent in the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for Bald Eagle in the Northern Region.

Central Region: The Bald Eagle is unlikely to occur within the Central Region. Suitable nesting habitat was not observed and nesting has not been recorded in this region, but migrating individuals could

potentially occur at Big Tujunga and Cogswell reservoirs. There are no CNDDB (2007) records for Bald Eagle in the Central Region.

Southern Region: The Bald Eagle is present in low numbers as a migrant and wintering species within the Southern Region. There are winter sightings of non-breeding Bald Eagles in the Prado Basin (approximately 3.5 miles south of the existing Chino substation), but suitable nesting habitat for Bald Eagle was not observed during reconnaissance-level surveys. There are no CNDDB (2007) records for Bald Eagle in the Southern Region.

Swainson's Hawk (*Buteo swainsoni*). Federal Status: Forest Service Sensitive; State Status: Threatened. The Swainson's Hawk was once one of the most common birds of prey in the grasslands of California and nested in the majority of the lowland areas of the state. Currently, the nesting range is primarily restricted to portions of the Sacramento and San Joaquin valleys, northeast California, and the Western Mojave, including the Antelope Valley (Bloom 1980). It was listed as threatened by the State of California in 1983.

The Swainson's Hawk requires large amounts of foraging habitat, preferably grassland or pasture habitats. Its preferred prey includes voles (*Microtus* spp.), gophers, birds, and insects such as grasshoppers (Estep 1989). It has adapted to the use of some croplands, particularly alfalfa, as well as grain, tomatoes, and beets (Estep 1989). Crops such as cotton, corn, rice, orchards, and vineyards are not suitable because they either lack suitable prey, or prey is unavailable to the hawks due to crop structure.

Land conversion for agricultural purposes in the Antelope Valley has led to an increase of high-quality patches of foraging habitat (alfalfa fields) large enough to sustain Swainson's Hawks. Two nesting pairs were documented within 10 miles of the proposed project (CNDDB 2007; P. Bloom pers. comm.) and were confirmed during surveys in June 2006. Within the Antelope Valley, potential foraging habitat composed of annual grasslands, fallow fields, and alfalfa fields is abundant in the vicinity of the proposed project.

Northern Region: The Swainson's Hawk is present in the Northern Region. There are 5 CNDDB (2007) records of Swainson's Hawk in the Northern Region, and reconnaissance surveys confirmed the presence of suitable nesting and foraging habitat within this region.

Central Region: The Swainson's Hawk is absent from the Central Region. This region does not have suitable foraging or nesting habitat for the species, and there are no CNDDB (2007) records for Swainson's Hawk in this region.

Southern Region: The Swainson's Hawk is unlikely to occur in the Southern Region. This region is outside the known breeding distribution of the species, although grasslands in the Montebello, Puente, and Chino Hills, and agricultural fields near the Mira Loma Substation provide marginal foraging habitat. There are no CNDDB (2007) records for Swainson's Hawk in the Southern Region.

Peregrine Falcon (*Falco peregrinus*). Federal Status: Forest Service Sensitive, Delisted; State Status: Endangered. The Peregrine Falcon occurs throughout much of the world, and is one of the fastest flying birds of prey. It preys almost entirely on birds, which it kills while in flight. This falcon nests on ledges and caves of steep cliffs. In California, it nests along the entire coastline, the Cascade Ranges, and the Sierra Nevada. During winter and migratory periods it can be found throughout the state. The peregrine is most often encountered in coastal or inland marsh habitats where large numbers of waterfowl and shorebirds concentrate (White et al. 2002).

A severe decline in populations of the widespread North American subspecies *F. p. anatum* or "American Peregrine Falcon" began in the late 1940s. This decline was attributed to the accumulation of DDE, a metabolite of the organochlorine pesticide DDT, in aquatic food chains (Gertsch et al. 1994). When concentrated in the bodies of predatory birds such as the Peregrine Falcon, Bald Eagle, Brown Pelican (*Pelecanus occidentalis*), and Osprey (*Pandion haliaetus*) it led to reproductive effects such as the thinning of eggshells.

The American Peregrine Falcon was listed as endangered by the Service in 1970 and by the State of California in 1971. Intensive efforts to protect Peregrine Falcons in California were initiated by the Santa Cruz Predatory Bird Research Group in 1975. This group removed the fragile eggs from the nests of wild falcons and replaced them with plastic substitutes. After carefully hatching the eggs in incubators and raising the chicks for 2 weeks, they were replaced in the original nests. Recovery efforts also included captive breeding programs and the banning of DDT in North America. These efforts led to a wild population of over 120 pairs of Peregrine Falcons by 1992 (Gertsch et al. 1994). The American Peregrine Falcon was removed from the federal endangered species list in 1999, but it is still listed as endangered in California.

Northern Region: The Peregrine Falcon is unlikely to occur in the Northern Region. Nesting habitat and prime foraging habitat (wetlands that support abundant water birds) are absent from this region. There are no CNDDB (2007) records for Peregrine Falcon in the Northern Region.

Central Region: The Peregrine Falcon may occur in the Central Region. Suitable nesting habitat was observed in Big Tujunga Canyon during reconnaissance surveys, and there is one CNDDB (2007) record for Peregrine Falcon in the vicinity of Big Tujunga Reservoir near Segment 11.

Southern Region: The Peregrine Falcon is present in the Southern Region. A single Peregrine Falcon was observed at the Mira Loma substation, and reconnaissance surveys identified suitable foraging habitat for this species in this region. There are no CNDDB (2007) records of nesting Peregrine Falcons in the Southern Region, but one individual was recorded along Harbor Boulevard in the Puente Hills (AMEC 2007).

Yellow-billed Cuckoo (*Coccyzus americanus*). Federal Status: None; State Status: Endangered. The Yellow-billed Cuckoo is a rare summer resident of well-developed desert and foothill riparian habitats below 3,000 feet elevation in California. The species is an unusually late migrant, with most birds arriving after 1 June (Small 1994). During the breeding season, it uses large blocks of riparian habitat,

particularly those with cottonwoods (*Populus* spp.) and willows, with a dense understory for nest sites. Yellow-billed Cuckoos have large home ranges, averaging 42 acres in Southern California (Laymon and Halterman 1989). Optimal stands are larger than 198 acres, while unsuitable stands are less than 37 acres (Laymon and Halterman 1989).

This neotropical migrant is endangered in California due to the loss and degradation of riparian habitat (Gaines and Laymon 1984). In Southern California, it is restricted to a few locations, notably the South Fork of the Kern River north of the proposed project (Gaines and Laymon 1984). Although the Los Angeles Basin supported hundreds of Yellow-billed Cuckoos before 1900, it is almost devoid of suitable riparian habitat today (Gaines 1987). During the breeding season, Yellow-billed Cuckoos prey on caterpillars, especially sphinx moth larvae, and grasshoppers. In Southern California, katydids become an increasingly important part of the diet during the latter part of summer. Also, small frogs and fruit such as blackberries (*Rubus* spp.), wild grapes (*Vitus* spp.), and elderberries (*Sambucus* spp.) can be important foods.

Northern Region: The Yellow-billed Cuckoo is absent from the Northern Region. There is no suitable breeding or foraging habitat and no CNDDB (2007) records for Yellow-billed Cuckoo in the Northern Region.

Central Region: The Yellow-billed Cuckoo is absent from the Central Region. There is no suitable foraging or breeding habitat and no CNDDB (2007) records for Yellow-billed Cuckoo in the Central Region.

Southern Region: The Yellow-billed Cuckoo is unlikely to occur in the Southern Region. There is one CNDDB (2007) record for Yellow-billed Cuckoo along the San Gabriel River in El Monte (approximately 2.5 miles north of Segment 8) and two records along the Santa Ana River near the Prado Flood Control Basin (approximately 3.5 miles south of Segment 8). However, habitat within the proposed project along the Rio Hondo, the Whittier Narrows Recreation Area, and the San Gabriel River is heavily disturbed and marginally suitable for the Yellow-billed Cuckoo.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Federal Status: Endangered; State Status: Endangered. The Southwestern Willow Flycatcher is one of 3 subspecies of Willow Flycatcher that breed in California (Unit 1987). It formerly occupied suitable riparian habitats throughout the arid southwest United States and northern Mexico including approximately the southern third of California. Its decline is linked to the widespread loss and degradation of riparian habitats regionally and to the introduction of the Brown-headed Cowbird (*Molothorus ater*), which is a brood parasite.

The current breeding range of the Southwestern Willow Flycatcher in Southern California includes the San Bernardino Mountains to the east, the Mojave River to the northeast, and the Santa Clara River to the northwest (Service 2002b). Non-federally-listed subspecies of Willow Flycatchers that breed farther north into southern Canada are common migrants through the Southern California region. Because of these numerous migrants, extra care must be taken to document the Southwestern Willow Flycatcher in breeding locations in the region (Unit 1987).

This locally rare subspecies of the Willow Flycatcher is a riparian obligate that prefers well-developed riparian gallery forests with flooded surface water or a damp understory. A neotropical migrant and insectivore, the Southwestern Willow Flycatcher nests in willows, nettles, and lower branches of cottonwoods (Sogge and Marshall 2000).

Northern: The Southwestern Willow Flycatcher is absent from the Northern Region. This region is outside the known breeding range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for Southwestern Willow Flycatcher in the Northern Region.

Central: The Southwestern Willow Flycatcher is unlikely to occur in the Central Region and is an uncommon transient through the ANF. Southwestern Willow Flycatchers were not conclusively identified during reconnaissance surveys in 2007, although Willow Flycatchers were detected on several occasions. Only marginal breeding habitat was observed in the ANF, and there are no CNDDB (2007) records for the Southwestern Willow Flycatcher in the Central Region.

Southern: The Southwestern Willow Flycatcher may occur in the Southern Region. There are 4 CNDDB (2007) records for breeding Southwestern Willow Flycatchers in this region, including 2 historical occurrences in Pasadena (1904) and Los Angeles (1894), and 2 records (1990, 1991) of breeding pairs in the Prado Flood Control Basin, more than 5 miles south of the Chino substation of Segment 8. Suitable nesting habitat for Southwestern Willow Flycatcher in the Southern Region was observed in the Whittier Narrows area of Segments 7 and 8 during reconnaissance surveys.

Least Bell's Vireo (*Vireo bellii pusillus*). Federal listing status: Endangered; State listing status: Endangered. The Least Bell's Vireo was historically common in lowland riparian habitat, ranging from coastal Southern California through the Sacramento and San Joaquin valleys with scattered populations in the Coast Ranges, Sierra Nevada, Mojave Desert, and Owens and Death valleys (Kus 2002). Currently, Least Bell's Vireo occurs only in riparian woodlands (especially Southern Cottonwood Willow Riparian Forest, Southern Willow Scrub, and Mule Fat Scrub) in Southern California, with the majority of breeding pairs in San Diego, Santa Barbara, and Riverside counties and smaller populations in Los Angeles, San Bernardino, and Imperial counties (Service 1998). Approximately half of the current population occurs within drainages on Camp Pendleton in northwestern San Diego County.

The Least Bell's Vireo arrives in Southern California in mid-March to early April and leaves for its wintering ground in late September. During this period, the species nests in riparian scrub and woodland habitats that provide dense foliage (Zeiner et al. 1990). Plant species frequently used as nest sites include willows, mulefat (*Baccharis glutinosa*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), and Fremont cottonwood (*Populus fremontii*) (Service 1998). Individuals occasionally nest in non-native trees or shrubs adjacent to high quality habitat where large populations occur in major riparian corridors (AMEC unpublished data). Individuals build nests in dense shrubs 2 to 4 feet above the ground, often in early to mid-successional riparian habitat with a dense understory that provides sufficient cover for nest concealment (Kus 2002). Restored riparian habitats in the coastal lowlands of Southern California can support breeding Least Bell's

Vireos within 3 to 5 years, particularly if they are adjacent to established riparian areas (Kus 1998). Least Bell's Vireos exhibit high fidelity to nest sites (Service 1998).

The Least Bell's Vireo primarily consumes insects by foliage gleaning (picking prey from leaf or bark substrates), and hovering (removing prey from vegetation surfaces while fluttering in the air) often less than 12 feet from the ground (Zeiner et al. 1990, Kus 2002). Caterpillars, beetles, grasshoppers, and moths are frequently consumed, especially in riparian habitat.

Riparian habitat throughout the historic range of the Least Bell's Vireo has been destroyed or fragmented by urban development and water diversion projects (Smith 1977), prompting a widespread decline in this species in the past century (Service 1998). The invasion of exotic plants into the riparian habitats of Southern California, most notably giant reed (*Arundo donax*), has heavily degraded much of the remaining suitable habitat for Least Bell's Vireo (McWilliams 2004). Other disturbances to Least Bell's Vireo include runoff from agricultural fields and roadways, traffic noise, feral pets, recreational use of habitat, and increased foraging habitat for Brown-headed Cowbird. Recent conservation and riparian restoration efforts have succeeding in increasing the numbers of Least Bell's Vireo in Southern California (Kus 2002).

Northern Region: The Least Bell's Vireo is unlikely to occur in the Northern Region. Suitable habitat is absent, there are no CNDDB (2007) records in this region, and records indicate only scattered occurrences of Least Bell's Vireo in portions of the Mojave Desert.

Central Region: The Least Bell's Vireo is unlikely to occur within the Central Region. Nesting has not been recorded and there are no CNDDB (2007) records, but nesting individuals could potentially occur along the southern boundary of Segments 6 and 11. Sporadic sightings have been made in the ANF at Big Tujunga Creek, Francisquito Creek, and the Upper Santa Clara River (Stephenson and Calcarone 1999). Based on reconnaissance surveys, however, only marginal habitat occurs within the Central Region.

Southern Region: The Least Bell's Vireo is present within the Southern Region. Up to 4 Least Bell's Vireo pairs have been detected in fragmented habitat near Eucalyptus Avenue south of the Chino Hills Parkway, and 2 birds were detected at the Whittier Narrows Nature Center during reconnaissance surveys in 2007. Suitable riparian habitat was observed at the Whittier Narrows Recreation Area, Whittier Narrows Nature Center, and Rio Hondo, and each of these sites hosted one or more breeding pairs of Least Bell's Vireos during the 2007 nesting season (AMEC 2007). There is one record of this species in Sycamore Canyon of the Puente Hills (AMEC 2007). There are 17 CNDDB (2007) records for Least Bell's Vireo in this region (recorded between 1974 and 2004), and all but one of these records are from the Chino Hills or along the Santa Ana River (primarily within or adjacent to the Prado Flood Control Basin). Seven pairs of Least Bell's Vireo were recorded in 2001 at Santa Fe Flood Control Basin adjacent to Segment 7, and one nesting pair was recorded in 2002 in the Whittier Narrows Recreation Area. South of the base of the San Gabriel Mountains, there are CNDDB records for Least Bell's Vireo in Van Tassel

Canyon, Fish Canyon, and the city of El Monte. The University of California Berkeley MVZ (2007) also has historical records from Eaton Canyon and Eaton Wash near Segment 11.

Coastal California Gnatcatcher (*Polioptila california californica*). Federal listing status: Threatened; State listing status: Species of Special Concern. The Coastal California Gnatcatcher is restricted to coastal sage scrub habitats of coastal Southern California and northern Baja California. In California, it is a year-round resident of scrub-dominated plant communities from southern Ventura County southward through Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties (Atwood 1980). Habitat loss and fragmentation is the primary cause of the decline of this species in Southern California (Atwood 1980, Zeiner et al. 1990).

The Coastal California Gnatcatcher is limited to moderately dense stands of Coastal Sage Scrub occurring below 1,500 feet elevation (most below 1,000 feet) on arid hillsides, mesas, or washes of Southern California (Atwood 1980). Nest sites are often dominated by California sagebrush (*Artemisia californica*), although white sage (*Salvia apiana*), black sage (*Salvia mellifera*), chamise (*Adenostoma faciculatum*), Cholla (*Opuntia* spp.), buckthorn (*Rhamnus crocea*), and California buckwheat (*Eriogonum faciculatum*) may be co-dominants (Atwood 1980, Mock 2004). Other sites, including many within the proposed project, are dominated by California buckwheat (Braden et al. 1997). Nests are restricted to areas with less than 40% slope gradient (Mock 2004) and are vulnerable to brood parasitism by Brown-headed Cowbirds and predation by a variety of mammals, birds, and reptiles (Atwood and Bontrager 2001). Gnatcatchers do not use recently burned coastal sage scrub because shrub cover is too low (<50%), although they usually recolonize burned sites 4 to 5 years following the burn (Beyers and Wirtz 1997).

This species gleans insects and spiders from the foliage of shrubs and herbaceous plants and infrequently consumes seeds. Average territory size of the Coastal California Gnatcatcher is between 2 and 25 acres (Mock 2004). The peak of egg-laying is usually in April and May, and young typically fledge within 25 days (Atwood and Bontrager 2001). Occurrence or nest success of California Gnatcatcher is not reduced near edges with human development (Mock 2004). Construction monitoring studies suggest that California Gnatcatchers are tolerant of adjacent construction activities and high noise levels. However, disturbances that reduce shrub cover (grazing, off-road vehicle use, mechanical disruption, fire) can reduce habitat suitability for the species (Awbrey 1993, Famorlaro and Newman 1998, URS Corporation 2004).

Core population areas supporting 30 or more pairs of California Gnatcatcher within the proposed project include Montebello, Coyote Hills near Fullerton, and the Puente-Chino Hills (Mock 2004). The Service designated a total of 13 critical habitat units for this species, including one part of Segment 7 (Whittier Narrows Recreation Area) and several portions of Segment 8A in the Montebello, Puente, and Chino Hills (Critical Habitat Unit 9; Service 2003).

Northern Region: The California Coastal Gnatcatcher is absent from the proposed project in the Northern Region. There are no CNDDB (2007) records for Coastal California Gnatcatcher in the region, and this

region is more than 20 miles outside the range of the species (Atwood 1980). Reconnaissance surveys did not detect suitable habitat for this species throughout the Northern Region of the proposed project.

Central Region: The Coastal California Gnatcatcher is unlikely to occur in the Central Region. Reconnaissance surveys found marginal, low-suitability Coastal Sage Scrub habitat with steep slopes at the southern end of Segments 6 and 11 in the ANF. There are no CNDDB (2007) records for Coastal California Gnatcatcher in this region, and historic records (Atwood 1980) indicate that this species was uncommon or rare along the steep, southern slopes of the San Gabriel Mountains.

Southern: The Coastal California Gnatcatcher is present in the Southern Region. Previous surveys identified 8 pairs of Coastal California Gnatcatchers in the Montebello Hills (AMEC 2007). A total of 7 individuals were observed in the same area, and a female was observed near the Puente Hills landfill during reconnaissance surveys in 2007. Suitable Coastal Sage Scrub habitat was observed in the Montebello Hills, Puente-Chino Hills, and along the San Gabriel River within the Whittier Narrows Recreation Area. There are 23 CNDDB (2007) records for Coastal California Gnatcatcher in the Southern Region, the majority based on recent (< 10 yr) observations.

Stephens' Kangaroo Rat (*Dipodomys stephensi*). Federal Status: Endangered; State Status: Threatened. Stephens' kangaroo rat is a nocturnal, burrowing rodent with external, fur-lined cheek pouches, a long bicolored tail, and long feet adapted for hopping. It occurs below an elevation of 2,800 feet in portions of western Riverside, southwestern San Bernardino, and northwestern San Diego counties. Threatened by loss of habitat from urban development throughout its range, this species currently is limited to isolated populations within larger core reserves (Best 1999).

Suitable habitat for Stephens' kangaroo rat includes sparsely vegetated grassland or coastal sage scrub, often with less than 50% cover in summer (Bleich 1977, O'Farrell and Uptain 1987). This species occupies habitat with gradual slopes (usually less than 15%) and sandy or gravely soils, although sometimes it uses abandoned burrows of pocket gophers (*Thomomys bottae*) and California ground squirrels (*Spermophilus beecheyi*) in other soil types (Best 1999). Periodic fire or grazing may improve habitat quality for Stephens' kangaroo rat in dense areas of annual grass or vegetation cover (O'Farrell and Uptain 1987).

As with other kangaroo rats, Stephens' kangaroo rat primarily consumes seeds and acquires water from its food. Breeding occurs from late spring to mid-summer, and in years of greater than average rainfall, females may produce 2 litters (Best 1999). Home range sizes usually vary between 0.14 and 0.24 acres, and common predators include snakes, barn owls, long-eared owls, foxes, coyotes, and domestic dogs and cats (Best 1999). Off-road vehicles, discing of habitat, over-grazing by livestock, rodenticides, and pets all can be detrimental to the Stephens' kangaroo rat (Service 1987).

Northern: The Stephens' kangaroo rat is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central: The Stephens' kangaroo rat is absent from the Central Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Central Region.

Southern: The Stephens' kangaroo rat is unlikely to occur in the Southern Region. Suitable habitat for this species was observed between Sanomae Mountain Way and Coral Ridge Park within the eastern Chino Hills along Segment 8. There are 3 CNDDB (2007) records for Stephens' kangaroo rat (1992 to 2003) located immediately southeast of the city of Norco, approximately 6 miles southeast of the Mira Loma substation but 12 miles southeast of suitable habitat along Segment 8 in the Chino Hills.

Mohave Ground Squirrel (*Spermophilus mohavensis*). Federal Listing Status: None; State Listing Status: Threatened. The Mohave ground squirrel occurs in portions of 4 counties (Inyo, Kern, Los Angeles, and San Bernardino) in the Lower Sonoran Life Zone of the western Mojave Desert and occupies open creosote bush (*Larrea tridentata*) scrub, alkali desert scrub (*Atriplex*), and Joshua tree woodland in areas with flat to moderate terrain. The Mohave ground squirrel tends to avoid rocky areas and typically constructs burrows in sandy, alluvial, and gravelly soils (Best 1995).

The Mohave ground squirrel emerges from aestivation in spring, typically between mid-February and March, and actively forages for vegetation, seeds, arthropods, and fruit (Best 1995) and tends to stay close to its burrow while foraging. Burrows are used for aestivation and hibernation, predator avoidance, and thermoregulation. The breeding season occurs soon after emergence, and gestation lasts approximately 30 days (Best 1995). Avian and terrestrial predators of the Mohave ground squirrel include the Mohave rattlesnake (*Crotalus scutulatus*), desert kit fox (*Vulpes macrotis arsipus*), coyote, North American badger (*Taxidea taxus*), bobcat (*Lynx rufus*), Prairie Falcon (*Falco mexicanus*), Golden Eagle (*Aquila chrysaetos*), and Red-tailed Hawk (*Buteo jamaicensis*; Best 1995). After acquiring fat stores for hibernation, the Mohave ground squirrel typically enters aestivation in July or August. Habitat conversion to agriculture, suburban and urban land development, and military base development and operation has contributed to a decline in the abundance of Mohave ground squirrels.

Northern Region: The Mohave ground squirrel is present in the Northern Region. During 2006 reconnaissance surveys, one Mohave ground squirrel was observed within 500 feet of Segment 10 at the intersection of Purdy Avenue with Segment 10 (east of 90th Street West). Another Mohave ground squirrel was observed near the intersection of Koch Road and Arroyo Avenue, 1.3 miles northeast of the town of Mojave and approximately 5 miles east of the proposed Windhub Substation. During reconnaissance surveys in 2007, suitable habitat for this species was observed north of Backus Road and south of Oak Creek Road along Segment 10. Suitable habitat for Mohave ground squirrel also was observed south of Backus Road to Rosamond Boulevard, although this habitat is increasingly fragmented and less suitable to the south. Habitats south of Rosamond Boulevard to the Vincent Substation along Segments 4, 5, and 10 are unsuitable for the Mohave ground squirrel, because these are dominated by sagebrush (*Artemisia* spp.), rabbitbrush (*Chrysothamnus* spp.), and juniper (*Juniperus* spp.).

Central Region: This species is absent from the Central Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for Mohave ground squirrel in the Central Region.

Southern Region: This species is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for Mohave ground squirrel in the Southern Region.

Forest Service Sensitive Species and California Species of Special Concern

San Gabriel Mountains Slender Salamander (*Batrachoseps gabrieli*). Federal Status: Forest Service Sensitive; State Status: None. The San Gabriel Mountains slender salamander has a slender build with a snout-vent length of 1.6 to 2.0 inches. Ground color is black, and individuals are suffused with coppery or white to silvery iridophores (reflective, iridescent, pigmented cells). The San Gabriel Mountains slender salamander was described as a new species in 1996 (Wake 1996 in Petranka 1998). Initially, the San Gabriel Mountains slender salamander was only known from 2 locations in the San Gabriel Mountains; however, it has since been found at 11 other sites in the San Gabriel and San Bernardino mountains (Stewart et al. 2005). The range of this species is not well known. This species has been found at elevations ranging from approximately 2,789 to 7,808 feet. San Gabriel Mountains slender salamanders have been found in or around talus, rocks, rotting logs, bark, downed branches, and downed fern fronds (Hansen et al. 2005 in Stewart et al. 2005). This species has been found in association with canyon live oak (*Quercus chrysolepus*), bigcone spruce (*Pseudotsuga macrocarpa*), Jeffrey pine (*Pinus jeffreyi*), ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), mountain mahogany (*Cercocarpus betuloides*), and Spanish bayonet (Stewart et al. 2005).

Northern Region: The San Gabriel Mountains slender salamander is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The San Gabriel Mountains slender salamander is unlikely to occur within the Central Region. Although suitable habitat is present within the Central Region, all known occurrences of this species (CNDDB 2007) are more than 10 miles east of Segment 6. It is possible but unlikely that undiscovered populations of San Gabriel Mountains slender salamanders occur within Segments 6 and 11.

Southern Region: The San Gabriel Mountains slender salamander is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Southern Region.

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Status: Forest Service Sensitive; State Status: Special Concern. This unusual lizard is found in sandy or loose loamy soils in areas of sparse vegetation in habitats including beaches, chaparral, desert, pine-oak woodland, or under sycamores, cottonwoods, or oaks growing on stream terraces (Jennings and Hayes 1994). Legless lizards forage for

insects and spiders underneath leaf litter or underneath sandy soil, usually at the base of shrubs or other vegetation (Jennings and Hayes 1994). Their adaptation for burrowing, which requires soils with a high sand fraction, makes legless lizards vulnerable to ground disturbing activities such as agriculture.

Northern Region: The silvery legless lizard is likely to occur in the Northern Region. The CNDDB (2007) lists one record 0.2 miles southeast of the intersection of Segment 5 and Amargosa Creek and another record in the city of Palmdale, 2.5 miles east of Segment 5. Suitable habitat for the silvery legless lizard occurs at Amargosa Creek and may occur at other locations with friable soils throughout the Northern Region.

Central Region: The silvery legless lizard is unlikely to occur in the Central Region. This region is outside the known range of the species, and there are no CNDDB (2007) or other records for this species in the Central Region. However, suitable habitat for this species does occur in the Central Region, and previously undetected populations may exist within this region owing to the cryptic nature of the species.

Southern Region: The silvery legless lizard is likely to occur in the Southern Region. Suitable habitat for this species was observed in the Chino and Puente Hills (Segment 8), undeveloped habitats west of Chino Hills Parkway (Segment 8), and riparian habitats surrounding the San Gabriel River (Segment 7). There are no CNDDB (2007) records for the silvery legless lizard within the Southern Region.

San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*). Federal Status: Forest Service Sensitive; State Status: Special Concern. The San Diego horned lizard is a medium-sized (6 to 6.25 inches) total length, flat-bodied species. 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. The San Diego horned lizard occurs in a wide variety of habitats throughout its range, though found primarily in chaparral and mixed chaparral-coastal sage scrub, to stands of pure coastal sage scrub. It is also known to occur in riparian habitats, washes, and most desert habitats. They are occasionally locally abundant in conifer-hardwood and conifer forests. This species is most common in open, sandy areas where abundant populations of native ant species (e.g., *Pogonomyrmex* and *Messer* spp.) are present. They primarily eat insects such as ants and beetles. Though once common throughout much of coastal and cismontane Southern California, 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 ants (*Camponotus* spp.), is another factor in their decline.

Northern Region: The San Diego horned lizard is likely to occur within Segments 4 and 5 in the Northern Region. The northern half of Segment 4 and all of Segment 10 are outside the range of this subspecies, so the San Diego horned lizard is absent from these northern Segments. The CNDDB (2007) lists 4 records for the San Diego horned lizard in the Northern Region.

Central Region: The San Diego horned lizard is present in the Central Region. AMEC (SCE 2007) observed this species along Segment 11, and it is likely to occur in many of the undeveloped habitats

within the Central Region, excluding dense forests at the higher elevations of the ANF. The CNDDB (2007) lists 8 records for the San Diego horned lizard within the Central Region, including 5 records within 0.5 miles of Segments 6 and 11.

Southern Region: The San Diego horned lizard is likely to occur in the Southern Region. Suitable habitat for the species was observed in the Chino and Puente Hills (Segment 8), just south of the ANF boundary (Segments 7 and 11), and in undeveloped portions of the Whittier Narrows Recreation Area (Segments 7 and 8). The CNDDB (2007) lists 10 records for the San Diego horned lizard within the Southern Region, including 3 older records from areas that are currently developed.

Coastal Rosy Boa (*Charina trivirgata roseofusca*) Federal Status: Forest Service Sensitive; State Status: Special Concern. The coastal rosy boa is a medium-sized (to 44 inches), heavy-bodied species. Dorsal (ground) coloration is somewhat variable, usually silver-gray to slate gray, with 3 longitudinal reddish-brown ("rosy") to orangish to darker gray stripes or a "zigzag" pattern extending the length of the body. Markings are sometimes indistinct in larger snakes. Eyes are small with vertical pupils.

Most records of coastal rosy boa in Southern California are in coastal sage scrub, chaparral, or mixed habitats. They also found in riparian areas and in oak woodlands, where they interdigitate with coastal sage scrub or chaparral. They are common in desert scrub areas but apparently absent from grasslands. Rock outcrops are a common but not invariable feature of habitats frequented by this snake. The nests of woodrats are commonly utilized as refugia and possibly as foraging sites as well. This species is found from below sea level (in Death Valley) to approximately 4,000 feet elevation in Southern California. This species climbs well and may be observed a considerable distance above the ground in cracks or crevices in granodiorite boulders. Rosy boas may be encountered both diurnally and nocturnally, although diurnal excursions are apparently more common on overcast days. The activity period for this species extends from April through September, but individuals may occasionally be found under cover at other times of the year. The rosy boa preys primarily on small mammals, including pocket mice (*Perognathus* spp.), young wood rats (*Neotoma* spp.), and birds. This species is remarkably slow-moving and placid.

Northern Region: The coastal rosy boa is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The coastal rosy boa is likely to occur within the Central Region. This region lies within the range of the species and abundant suitable habitat is present. Coastal rosy boas likely occur in variety of undeveloped habitats throughout the Central Region, with the exception of densely forested areas. The CNDDB (2007) lists one record for the coastal rosy boa within the Central Region (from 1919) and two specimens (in the California Academy of Sciences) from the Mt. Wilson area.

Southern Region: The coastal rosy boa is likely to occur within the Southern Region. This area lies within the range of the species, and suitable habitat is present in the Chino and Puente Hills of Segment 8 and the undeveloped portions of the Whittier Narrows Recreation Area (Segments 7 and 8). The CNDDB (2007) lists no record for the coastal rosy boa within the Southern Region.

San Bernardino Ringneck Snake (*Diadophis punctatus modestus*). Federal Status: Forest Service Sensitive, Special Concern; State Status: None. The ringneck snakes are a diminutive group of snakes that occur across much of North America, and the San Bernardino ringneck snake is one of 6 currently recognized subspecies that occur in California. The diet of ringneck snakes includes slender salamanders, small frogs, lizards, tadpoles, small snakes, slugs, and earthworms (Brown 1997). Ringneck snakes are rarely observed on the surface, but are often found under rocks, in logs, or under plant or other debris (Holland et al. 2001). The range of the San Bernardino ringneck snake extends from about the northern border of San Diego County, north to the Los Angeles area, west to about the Palm Springs area, and north to the mountains just east of the southern end of the San Joaquin Valley.

Northern Region: San Bernardino ringneck snake is unlikely to occur in the Northern Region. This region is within the range of the San Bernardino ringneck snake, but suitable habitat for this species is lacking except in the vicinity of Amargosa Creek and Oak Creek. The CNDDB (2007) lists no record for the San Bernardino ringneck snake within the Northern Region.

Central Region: The San Bernardino ringneck snake is likely to occur in the Central Region. Suitable habitat for this species was observed throughout Segments 6 and 11. The CNDDB (2007) does not include any record of the San Bernardino ringneck snake within the Central Region.

Southern Region: The San Bernardino ringneck snake is present in the Southern Region. This species was observed in 2002 in the western Puente Hills (LSA 2007). Suitable habitat for this species was observed in woodlands and riparian habitats of the Chino and Puente Hills along Segment 8 (including Tonner Canyon). The CNDDB (2007) does not include any record of the San Bernardino ringneck snake within the Southern Region.

San Bernardino Mountain Kingsnake (*Lampropeltis zonata parvirubra*). Federal Status: Forest Service Sensitive; State Status: Special Concern. The San Bernardino mountain kingsnake is a medium-sized (to 48 inches), medium-bodied species. The dorsal (ground) color is white, with black rings that usually reach the ventral (belly) scales, and red rings or bands that may reach the ventral scales. The pattern of white-black-red-black-white bands resembles that of venomous coral snakes; however no species of coral snake occurs in California (Stebbins 1983).

This taxon occurs in montane coniferous and mixed coniferous forest in Southern California, and occasionally in riparian woodland at lower elevations. In other areas it may occasionally venture into chaparral communities. It is frequently, but not invariably, associated with rock outcrops, where individuals use crevices and cap rocks, or rocks laying on soil as refugia and basking sites. Optimal habitat is found in canyons where tree canopy is not too dense and rock piles and/or talus are abundant. A key habitat feature in many areas seems to be the presence of downed logs, usually of large conifers. This snake is primarily active from approximately March to November, with the peak of activity occurring in April and May, although snakes may occasionally be found under cover on warm days outside this period. The only known prey items in the diet of this snake are sagebrush lizards

(*Sceloporus graciosus*) and western skinks (*Eumeces skiltonianus*; McGurty 1988 in Jennings and Hayes 1994), although it likely preys upon other lizards and possibly small mammals.

Northern Region: The San Bernardino mountain kingsnake is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The San Bernardino mountain kingsnake is likely to occur in the Central Region. This region lies within the range of the species, and suitable habitat is widely distributed across the region. Suitable habitat was observed in the arroyos and canyons drained by Big Tujunga Creek, Monte Cristo Creek, Lynx Gulch, Alder Creek, and the West Fork of the San Gabriel River. The CNDDB (2007) contains no record of the San Bernardino mountain kingsnake within the Central Region.

Southern Region: The San Bernardino mountain kingsnake may occur in the Southern Region. Limited suitable habitat for the species was observed along Segments 7 and 11 just south of the ANF boundary. This species is absent from the remainder of the Southern Region, because it lies outside the known range of the species and below the species' lower elevation limit. The CNDDB (2007) lists no record for the San Bernardino mountain kingsnake within the Southern Region.

Two-striped Garter Snake (*Thamnophis hammondii*). Federal Status: Forest Service Sensitive; State Status: Special Concern. The two-striped garter snake is a slender-bodied snake that grows to approximately 3 feet in length. This species is highly aquatic but on rare occasions may move considerable distances into upland habitats, even where permanent water is lacking. Two-striped garter snakes have been observed in riparian, freshwater marsh, coastal sage scrub, chaparral, oak woodland, and grassland habitats. This species is normally active from April to October and may become primarily nocturnal or crepuscular during the summer months. Two-striped garter snakes prey primarily on fish, fish eggs, and other aquatic vertebrates. Populations may be threatened by the presence of numerous exotic species that co-occur with them, including bullfrogs and centrarchid fishes.

Northern Region: The two-striped garter snake is likely to occur in the Northern Region. The southern portion of the Northern Region lies within the species' range, and suitable habitat is present at Amargosa Creek. There are CNDDB (2007) records for this species from Amargosa Creek, approximately 0.5 to 1.7 miles upstream from the intersection of Segment 5 with Amargosa Creek.

Central Region: The two-striped garter snake is present in the Central Region. This entire region lies within the range of the species, and suitable habitat is abundant in the ANF. There are CNDDB records of this species within the West Fork San Gabriel River (200 feet east of Segment 6), Little Rock Creek (5 miles east of Segment 6), and Roberts Canyon (2 miles east of Segment 6). Suitable habitat was observed within Monte Cristo Creek, Lynx Gulch, Alder Creek, West Fork San Gabriel River, and Big Tujunga Creekin the vicinity of Segment 6, as well as Aliso Creek, Josephine Creek, Clear Creek, North Fork Mill Creek, Woodwardia Canyon/Dark Canyon, Arroyo Seco Creek, Eaton Wash, and Big Tujunga Creek in the vicinity of Segment 11.

Southern Region: Two-striped garter snakes are likely to occur in the Southern Region. Suitable habitat for the species was observed in Rio Hondo (Segment 7), Eaton Wash (Segment 11), San Gabriel River (Segment 7), an unnamed drainage/canal (Segment 8), Brea Canyon (Segment 8), and Tonner Creek (Segment 8). Habitats within Eaton Wash and Tonner Creek are particularly suitable for two-striped garter snakes. There are CNDDB (2007) records for the two-striped garter snake in Roberts Canyon, Fish Canyon, and the San Gabriel River at the head of Roberts Canyon; all locations are 2 to 3 miles east of Segment 7.

Southwestern Pond Turtle (*Actinemys (=Emys) marmorata pallida*). Federal Status: Forest Service Sensitive; State Status: Special Concern. The southwestern pond turtle is a medium-sized brown or olive-colored aquatic turtle and is found west of the Sacramento-San Joaquin Delta, and south to northern Baja, except in desert areas. Both subspecies that occur in California, the northwestern pond turtle (*A. m. marmorata*) and the southwestern pond turtle (*A. m. pallida*), are considered by the state of California to be species of special concern. The pond turtle is normally found in and along riparian areas, although gravid females have been reported to nest more than 1,300 feet away from the nearest aquatic habitat (Holland 1994). Pond turtles may also make overland movements up to 1 mile between areas of aquatic habitat (Bury 1972 in Ernst et al. 1994). The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites, although they are extremely wary animals and often dive into the water at any perception of danger.

Northern Region: The southwestern pond turtle is likely to occur in the Northern Region. Suitable habitat was observed within the reaches of Amargosa Creek, but is absent elsewhere in the Northern Region. Although pond turtles were not observed during reconnaissance surveys in 2006 and 2007, there are two CNDDB (2007) records for this species along Segment 5.

Central Region: The southwestern pond turtle is likely to occur in the Central Region. Suitable habitat was observed in Big Tujunga Creek, Monte Cristo Creek, Lynx Gulch, Alder Creek, and West Fork San Gabriel River of Segment 6, as well as Clear Creek, Dark Canyon, Arroyo Seco Creek, Eaton Wash, and Big Tujunga Creek of Segment 11. All of these areas contain perennial or nearly perennial water with deep plunge pools, rocks, logs, and other refugia and basking sites. There are CNDDB records for the southwestern pond turtle from the Azusa, El Monte, and Pasadena quadrangles.

Southern Region: The southwestern pond turtle is present in the Southern Region. During reconnaissance surveys in 2007, this species was observed along the San Gabriel River at the San Jose Diversion Channel near Segment 7 (just north of the 605/60 Freeway interchange) and within Brea Canyon near Segment 8 (just east of the intersection of Segment 8 and Highway 57). One unidentified juvenile aquatic turtle also was observed in an unnamed pond south of Huntington Drive and 0.2 miles south of Segment 11. The southwestern pond turtle may also occur in Rio Hondo (Segment 7), Eaton Wash (Segment 11), an unnamed drainage/canal near Segment 8, and Tonner Creek (Segment 8). All of these areas contain perennial or nearly perennial water with deep plunge pools, rocks, logs, and other refugia and basking

sites. Eaton Wash and Tonner Creek comprise high quality habitat, and pond turtles are likely to occur at those locations. There are CNDDB records for the southwestern pond turtle from the Azusa, El Monte, and Pasadena quadrangles.

Golden Eagle (*Aquila chrysaetos*). Federal listing status: None; State listing status: Species of Special Concern, Fully Protected. The Golden Eagle is a large, dark brown raptor that is an uncommon resident and migrant in California. Potential breeding habitat occurs throughout the state, with the exception of the interior Central Valley (DeLong 2004). The breeding season in California occurs between late-January and late-August (Zeiner et al. 1990). The home range of breeding eagles may include a number of alternate nests, usually on cliffs or in large trees, but nests also may be located on transmission line towers. This species exhibits strong fidelity to territories and often reuses nest sites (DeLong 2004). Golden Eagles in California prefer open habitats such as grasslands, shrublands, and open woodlands but also use open coniferous forests, alpine meadows, and riparian habitats (Tesky 1994). Golden Eagles forage upon a variety of prey but show a preference for rabbits and ground squirrels.

Golden Eagles and their nests and eggs are fully protected in California pursuant to Section 3511 of the California Fish and Game Code. In addition, Golden Eagles and their nests are federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Golden Eagles are negatively affected by residential and urban development, and individuals will avoid urban and irrigated agricultural areas. In coastal Southern California, Golden Eagle populations have declined substantially as a result of habitat loss and fragmentation (Tesky 1994). In California, major sources of mortality for Golden Eagles include pesticide use (DDT, DDE, strychnine), lead-poisoning, collisions with wind-turbine blades at wind-energy farms, and electrocution from power lines (Tesky 1994). In a radio-tracked population study of 61 Golden Eagles in central California, a minimum of 22 (38%) eagles died from wind-turbine blade strikes and 10 (16%) from electrocution with power distribution lines (Hunt 1998).

Northern Region: The Golden Eagle is present in the Northern Region. One Golden Eagle was observed along Segment 10 in previous surveys (AMEC 2007), and another individual was observed during reconnaissance surveys in 2007 near the northwestern terminus of Segment 4. Suitable nesting habitat for Golden Eagles was observed in the Northern Region along Segments 4, 5, and 10. There are no CNDDB (2007) records for the Golden Eagle in the Northern Region, although the Antelope Valley is within the historic range for this species.

Central Region: Nesting Golden Eagles are unlikely to occur in the Central Region. This species is uncommon in the ANF (Stephenson and Calcarone 1999), and suitable nesting habitat was not observed within Segments 6 or 11 during reconnaissance surveys. There are no CNDDB (2007) records for the Golden Eagle in the Central Region.

Southern Region: Nesting Golden Eagles may occur within the Southern Region. Suitable nesting habitat for Golden Eagles was observed within the Chino Hills during reconnaissance surveys. There are 2 CNDDB (2007) records for nesting Golden Eagles in the Chino Hills, including Brush Canyon in Chino

Hills State Park (1995) and north of Aliso Canyon (1998). Both nest locations are more than 2 miles south of Segment 8. A golden eagle was observed but not nesting in the Puente Hills in 2000 (LSA 2007).

California Spotted Owl (*Strix occidentalis occidentalis*). Federal listing status: Forest Service Sensitive Species; State listing status: Species of Special Concern. The California Spotted Owl breeds and roosts in forests and woodlands with large old trees and snags, dense canopies (≥70% canopy closure), multiple canopy layers, and downed woody debris (Verner et al. 1992a).

In Southern California, this owl occurs in the southern Coast Ranges from Monterey County south through the Transverse and Peninsular ranges to southern San Diego County (Gutiérrez et al. 1995). Within this range there are at least 11 isolated subpopulations, each separated by 5 to 45 miles of unsuitable habitat (Verner et al. 1992a). The owl occurs at sites that range in elevation from near sea level in Monterey County to 8,530 feet in San Bernardino County (Gutiérrez et al. 1995). The Spotted Owl Database (CDFG unpubl. data) includes >400 breeding/roosting sites in Southern California, about 85% of which are on federal, primarily USFS, lands (Verner et al. 1992b). The total population includes at least 600 birds (300 to 350 pairs; Noon and McKelvey 1992).

In Southern California, the California Spotted Owl principally occupies montane hardwood and montane hardwood-conifer forests, especially those with canyon live oak and bigcone Douglas fir, at mid- to high elevations. Less heat tolerant than most birds (Weathers et al. 2001), this owl selects habitats with dense, multi-layered canopies. The Spotted Owl does not build its own nest but depends on finding suitable, naturally occurring sites in trees, or rarely and mostly historically in cliffs (Gutiérrez et al. 1995). In Sierra Nevada conifer forests, nests are often (66%) in tree cavities or on broken-topped trees or snags (Verner et al. 1992a). Less often they are on abandoned raptor or raven nests, squirrel nests, dwarf mistletoe brooms, or debris accumulations in trees, but such platform nests predominate (59%) in oak woodlands.

Small to medium-sized mammals, primarily rodents, are this owl's main foods. It mostly takes northern flying squirrels (*Glaucomys sabrinus*) at higher elevations (conifer forests) in the Sierra Nevada and dusky-footed woodrats (*Neotoma fuscipes*) at lower elevations (oak woodlands and riparian forests) and throughout Southern California (Verner et al. 1992a). The primary threat to the California Spotted Owl is habitat loss and degradation. Its specialized habitat requirements, deferred reproductive maturity, low reproductive rate, and limited dispersal ability, make it especially vulnerable to habitat changes. Loss of suitable habitat results from certain types of timber harvest, large stand-destroying wildfires, and residential development. Habitat loss also contributes to habitat fragmentation, which impedes the dispersal of owls between suitable patches. Habitat fragmentation, both natural and anthropogenic, characterizes much of the owl's range in Southern California. The non-forested areas that separate subpopulations are formidable barriers to dispersing owls (LaHaye et al. 2001, Barrowlough et al. 2005). As the human occupation of this region increases, the extent of such barriers may increase to the point that owl dispersal is too restricted to allow adequate gene flow among subpopulations. Such small populations face decreased survival and reproductive success from inbreeding and an increased risk of

extinction from stochastic events, such as broad-scale fires. For this reason, catastrophic fires are of particular concern in Southern California. For example, 9 Spotted Owl territories in the San Gabriel Mountains were severely burned in 2002 and 2003 (Livezey 2005).

Northern Region: The California Spotted Owl is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The California Spotted Owl is present in the Central Region. There are 54 known owl sites in the San Gabriel Mountains and a potential population of 95 owls (Noon and McKelvey 1992). Protocol-level surveys in June and August 2007 detected owls at 11 calling stations between Angeles Crest Highway and Rincon Red Box Road on Segment 6 (AMEC 2007). A pair of California Spotted Owls was detected 0.4 miles south of the West Fork of the San Gabriel River along Segment 6 during reconnaissance surveys in 2007. There is extensive suitable habitat for this species in the Central Region.

Southern Region: The California Spotted Owl is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Southern Region.

Western Burrowing Owl (*Athene cunicularia hypugea*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The Burrowing Owl is a small, terrestrial owl of open country. Burrowing Owls favor flat, open grassland or gentle slopes and sparse shrubland ecosystems. These owls prefer annual and perennial grasslands, typically with sparse, or nonexistent, tree or shrub canopies (Clark and Plumpton 2005). In California, Burrowing Owls are found in close association with California ground squirrels (Coulombe 1971). Owls use the burrows of ground squirrels and other rodents for shelter and nesting (Martin 1983). Ground squirrels provide nesting and refuge burrows, and maintain areas of short vegetation height, which provide foraging habitat and allow for visual detection of avian predators by Burrowing Owls (Haug et al. 1993). In the absence of ground squirrel populations, habitats soon become unsuitable for occupancy by owls. Burrowing Owls are semi-colonial nesters, and group size is one of the most significant factors contributing to site constancy by breeding Burrowing Owls (Haug et al. 1993). The nesting season, as recognized by the Burrowing Owl Consortium (1993), runs from 1 February through 31 August.

Northern Region: The Burrowing Owl is present within the Northern Region. A Burrowing Owl nest was observed within the proposed project in 2006 near Avenue B and 95th Street West. Burrowing Owl sign was observed in 2007 within Segment 10 near the terminus of Cottonwood Creek. There are 9 records of Burrowing Owls within 5 miles of Segment 4 (CNDDB 2007).

Central Region: The Burrowing Owl is present within the Central Region. This species has been observed near Kentucky Springs (AMEC 2007) near the northern end of Segment 6. Suitable habitat for Burrowing Owl was observed within Kentucky Springs Wash (Segment 6), Gleason Canyon (Segment 11), and along Aliso Canyon Road (Segment 11). However, the ANF consists predominantly of forest or

chaparral habitat not typically conducive to Burrowing Owl occupation, and there are no CNDDB records of this species within the Central Region (CNDDB 2007).

Southern Region: The Burrowing Owl is present within the Southern Region. There are records of this species in Sycamore Canyon and Arroyo San Miguel within the Puente Hills (LSA 2007) and 4 CNDDB (2007) records within 5 miles of Segment 8. Suitable foraging and nesting habitat was observed within the Puente and Chino Hills along Segment 8.

Northern Goshawk (*Accipiter gentilis*). Federal listing status: Forest Service Sensitive Species; State listing status: Species of Special Concern (Nesting). The Northern Goshawk is an uncommon to rare large forest raptor that breeds in conifer and mixed-conifer-hardwood forests between elevations of approximately 2,000 and 10,000 feet in California. It is distributed in the North Coast Range as far south as Sonoma County, across the Cascades and Modoc plateau and south through the Sierra Nevada and White and Inyo Mountains as far south as the Tehachapi Mountains. Scattered historical and recent breeding records and observations of adults during the breeding period suggest the presence of small breeding populations in the Mount Pinos-Frazier Mountain area and in the San Gabriel, San Bernardino, San Jacinto, and Cuyamaca mountain ranges of Southern California (Garrett and Dunn 1981, Bloom et al. 1986, Lentz 1993, Kiff and Paulson 1997).

The Northern Goshawk nests in mature and old-growth forest stands over much of its California range. Nest stands have consistently larger trees, greater canopy cover, and relatively more open understories compared to non-nest stands (Hargis et al. 1994). In most forest vegetation types, canopy cover around the nest tree is usually 60 to 100%, although it is lower in naturally more open forests (Squires and Reynolds 1997). Stick nests are usually placed in some of the larger available trees or snags. Forest stands containing nests are often small, approximately 25 to 247 acres; territories may contain one to 5 alternative nest areas (Woodbridge and Detrich 1994). Northern Goshawk populations exhibit high annual variation in reproduction with 30% to 90% of pairs breeding in any year (Squires and Reynolds 1997). Variation in reproduction is associated with annual variation in weather and prey abundance. Although Northern Goshawks will prey on a large number of species, several important species and species groups dominate the majority of prey items and biomass in California. These species are the Douglas squirrel (*Tamiasciurus douglasii*), golden-mantled ground squirrel (*Spermophilus laterlis*), Belding ground squirrel (*S. beldingi*), western gray squirrel (*Sciurus griseus*), hares and rabbits (*Lepus* spp., *Sylvilagus* spp.), chipmunks (*Tamias* spp.), American Robin (*Turdus migratorius*), Northern Flicker (*Colaptes auratus*), and Steller's Jay (*Cyanocitta stelleri*). Goshawks forage in mature and old-growth forests that have relatively dense canopies but also capture prey in a variety of vegetative cover, including meadow edges and open sagebrush. Foraging habitat use probably varies seasonally in response to prey availability. The Northern Goshawk is a top tropic level predator that has relatively large spatial requirements and occurs at relatively low breeding densities. Habitat loss and degradation are the primary threats to this species. The historical and current distribution of the Northern Goshawk in the mountains of Southern California is uncertain due to limited information.

Northern Region: The Northern Goshawk is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The Northern Goshawk is unlikely to occur within the Central Region. Marginally suitable habitat (mixed bigcone Douglas fir/Coulter pine/canyon live oak forest) for this species was observed in the vicinity of Mount Gleason during reconnaissance surveys in 2007. There are no CNDDB (2007) records for Northern Goshawk in the Central Region.

Southern Region: The Northern Goshawk is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Southern Region.

Pallid Bat (*Antrozous pallidus*). Federal listing status: Forest Service Sensitive Species; State listing status: Species of Special Concern. The pallid bat is a light brown or sandy colored, long-eared, moderate-sized bat that occurs throughout California with the exception of the northwest corner of the state and the high Sierra Nevada (Zeiner et al. 1990). Pallid bats are most commonly found in oak savannah and in open dry habitats with rocky areas, trees, buildings, or bridges for roosting. Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in the crevices, hollows, and exfoliating bark of trees. Colonies can range from a few individuals to over a hundred (Barbour and Davis 1969) and usually this species occurs in groups larger than 20 individuals (Wilson and Ruff 1999). Males and females typically occupy the same late-fall and winter roosts found in canyon bottoms and riparian areas. After mating with males during the late-fall and winter season, females leave to form a separate maternity colony, often on ridge tops or other warmer situations (Johnston et al. 2006). Although crevices are important for day roosts, night roosts often include open buildings, porches, garages, highway bridges, and mines. Pallid bats may travel up to several miles for water or foraging sites if roosting sites are limited. This bat prefers foraging on terrestrial arthropods in open habitats and regional populations and individuals may show selective prey preferences (Johnston and Fenton 2001). They may also occur in open coniferous forests. Pallid bat roosts are very susceptible to human disturbance, and urban development has been cited as the most significant factor contributing to their regional decline (Miner and Stokes 2005).

Northern Region: The Pallid bat is unlikely to roost in the Northern Region, but suitable roosting habitat occurs for this species at a single isolated site. During reconnaissance surveys, suitable roosting habitat for the pallid bat was observed at the Cottonwood Creek and Aqueduct Road crossing, where a large-diameter cottonwood tree (*Populus fremontii*) provides suitable roosting habitat. Yuccas in the Sierra Madre in Sonora, Mexico have been known to provide roosting habitat for bats (Rodrigo Meddellin, pers. comm.), but there are no records of pallid bat roosting in Joshua trees or similar yucca species. A single night of preliminary acoustical monitors failed to detect pallid bat in a Joshua tree woodland along the northern end of Segment 10. There is one CNDDB (2007) record for a pallid bat in Soledad Canyon from 1942, approximately 4.8 miles southwest of the existing Vincent substation.

Central Region: The Pallid bat may roost in the Central Region. Suitable roosting habitat for pallid bats was observed in one location along Segment 6 during reconnaissance-level surveys in 2007. This site was approximately 900 feet west of Upper Big Tujunga Canyon Road and 0.8 miles north of the Angeles Crest Highway. A single night of preliminary acoustical monitors failed to detect this species at this site, comprising Coulter pine forest and southern alder and willow riparian forest habitat within Upper Big Tujunga Canyon. There are no CNDDB (2007) records for the pallid bat in the Central Region, but bat surveys in the late 1990s detected this species at 21% (total of 3) of the sample sites in the ANF at elevations ranging from 1,100 to 6,600 feet (Simons et al. 2000).

Southern Region: The Pallid bat is likely to roost in the Southern Region. Pallid bats were detected during bat surveys of the eastern Puente Hills in 2004 (Remington 2006). During reconnaissance surveys, a single night of preliminary acoustical monitors failed to detect this species at 3 sites near Tonner Canyon of the Chino Hills, but suitable roosting habitat for pallid bat was observed within this section of Segment 8. There are 7 CNDDB (2007) and 23 MVZ (2007) records for the pallid bat in the Southern Region, primarily in the foothill cities of the Los Angeles Basin (Pasadena, Glendora, Monrovia, El Monte, Sierra Madre, and Azusa). All of these records were at least 2 miles outside the proposed project and are at least 75 years old (recorded before 1932). Vaughan (1954) described pallid bats as "probably the most common and abundant bat of the citrus belt" (at the southern base of the San Gabriel Mountains). However, since that time this species has shown an alarming decline in coastal southern California, and only one of 12 roosts previously described within this region was occupied by bats when surveyed by Miner and Stokes in 2005.

Townsend's big-eared bat (*Corynorhinus townsendii*). Federal listing status: Forest Service Sensitive Species; State listing status: Species of Special Concern. California has 2 subspecies, *C. t. townsendii* and *C. t. pallescens*, and intergrades occur at the boundaries of the 2 subspecies. The Townsend's big-eared bat is a colonial species that feeds primarily on moths and other soft-bodied insects. Females aggregate in the spring at nursery sites known as maternity colonies. Although the Townsend's big-eared bat is usually a cave dwelling species, many colonies are found in anthropogenic structures such as the attics of buildings or old, abandoned mines. Roost sites in California include limestone caves, lava tubes, mine tunnels, buildings, and other structures (Williams 1986). Radiotracking studies suggest that movement from a colonial roost during the maternity season is confined to within 9 miles of the nursery. Townsend's big-eared bats are very susceptible to human disturbance, and females are known to completely abandon their young when disturbed. The loss of maternity and hibernation roosts has been cited as the most significant factor contributing to their decline throughout their range (Miner and Stokes 2005). In Southern California, Townsend's big-eared bat was once common in the coastal plains of Southern California where mines or caves were prevalent (Krutzsch 1948). However, this species has declined substantially in the region and is now primarily limited to the foothill and mountain regions of Southern California (Miner and Stokes 2005).

Northern Region: The Townsend's big-eared bat is unlikely to roost in the Northern Region, but this species could roost at a single isolated site. This site, located approximately 950 feet north of proposed

Segment 10A and 400 feet south of proposed Segment 10B, contained several abandoned and vandalized buildings and an underground storage area. Townsend's big-eared bat could potentially roost in the underground storage area, but there were no bats or signs of bats observed at this site during reconnaissance surveys in 2007. There are no CNDDB (2007) records for Townsend's big-eared bat in the Northern Region, although this species was once common in the deserts of Southern California where mines or caves were prevalent (Krutzsch 1948).

Central Region: The Townsend's big-eared bat is unlikely to roost in the Central Region, but this species could roost at a single isolated site. This site was within 50 feet of an access road and consisted of an unmapped abandoned mine entrance located in the San Gabriel Mountains, approximately 1.3 miles southwest of Mill Creek Summit. During reconnaissance level surveys, the original mine entrance was investigated and found to be sealed, but a second smaller entrance below the sealed entrance may be used by roosting Townsend's big-eared bats. No signs of Townsend's big-eared bats or other bat species were observed at the mine entrance or within visible portions of the mine during reconnaissance surveys in 2007. Whereas this small area could provide habitat for one to several Townsend's big-eared bats, these spaces did not provide habitat typical of a maternity colony. Several nearby private mines that were not accessible could potentially provide habitat for a colony. Because bats usually have several roosts in an area, and excellent habitat could potentially occur in the area, the small mine entrance could potentially be used by one to several individuals. Therefore, no maternity colony roosting habitat occurs on this segment, but solitary individuals could occasionally occur in the small mine entrance area found in the Central Region. There are no CNDDB (2007) records for the Townsend's big-eared bat in the Central Region of the proposed project. In recent surveys in Southern California, this species was encountered in mines above 2,800 feet elevation, but very few maternity colonies were observed (Miner and Stokes 2005). Other recent surveys for the Townsend's big-eared bat failed to detect this species in the ANF (Simons et al. 2000), although solitary individuals were detected in the Los Padres, San Bernardino, and Cleveland National Forests (Miner and Stokes 2005).

Southern Region: The Townsend's big-eared bat is unlikely to roost in the Southern Region. Suitable roosting habitat for Townsend's big-eared bats was not observed within the Southern Region during reconnaissance surveys in 2007. There is one MVZ (2007) record for the Townsend's big-eared bat approximately 10 miles to the east of the Mira Loma substation (recorded in 1968), and no CNDDB records (2007) for the region. Recent bat surveys failed to detect this species near the southern end of the proposed project in Orange County (Miner and Stokes 2005, Remington 2006).

Western Mastiff bat (*Eumops perotis*). Federal listing status: None; State listing status: Species of Special Concern. Western mastiff bats are the largest of all of North America species of bats with a forearm length of 3.1 to 3.3 inches and weighing up to 3.5 ounces. This species can forage up to 2,300 feet above ground level and typically forages for about 7 hours per night and has been observed 15 miles from the nearest roost (Vaughn 1959). This species roosts primarily in cliffs or high buildings where there is a minimum of 9.8 feet of vertical drop at the entrance to roosts. Mastiff bats consume a variety of insects, including moths, crickets, grasshoppers, dragonflies, cicadas, beetles, and bees, and

individuals may travel up to 15 miles from the nearest roost while foraging (Wilson and Ruff 1999). This species is found in central and south coastal California, the San Joaquin Valley, the southern half of the Sierra foothills, and throughout the desert regions. The western mastiff bat may use bridges, rocks, or buildings as night roosts, day roosts, or maternity roosts, and suitable roosting habitat may occur under bridges along State Routes 58, 14, and 2 (Angeles Crest Highway). Historically, this species was commonly observed in the San Gabriel foothills but uncommon in the coastal plains of Southern California (Krutzsch 1948). Vaughan (1954) mentioned that "probably [the western mastiff bat] occurs locally all along the coastal base of the [San Gabriel Mountain] range." However, this species is declining in Southern California primarily because of urban development and human disturbance (Pierson and Rainey 1998; Miner and Stokes 2005).

Northern Region: The Western mastiff bat is not expected to roost in the Northern Region of the proposed project. During reconnaissance level surveys, no suitable roosting habitat for the Western mastiff bat was observed, and there are no CNDDB (2007) records for Western mastiff bat in the Northern Region.

Central Region: The Western mastiff bat is unlikely to roost in the Central Region but could roost at a single isolated site. Suitable roosting habitat for the western mastiff bat was observed during reconnaissance surveys in 2007 along isolated cliffs bordering the Angeles Crest Highway (approximately 900 feet west of Segment 11 near Brown Canyon). Despite the lack of CNDDB (2007) records for the species in the region, western mastiff bat was detected in one bat survey of the ANF (Miner and Stokes 2005).

Southern Region: The Western mastiff bat is unlikely to roost in the Southern Region. During reconnaissance surveys in 2007, suitable roosting habitat for the western mastiff bat was not observed in this region. However, this species was detected near Colima Road during bat surveys of the Puente Hills in 2005 (Remington 2006). There are 11 CNDDB (2007) and 30 MVZ (2007) records for the western mastiff bat in the Los Angeles Basin, primarily in the foothill cities (recorded between 1903 and 1964).

Western Red Bat (*Lasiurus blossevillii*). Federal listing status: Forest Service Sensitive Species; State listing status: Species of Special Concern. The western red bat is an orange- to reddish-colored, moderately small-sized bat that occurs throughout much of California. This species is often found in forest or woodlands, especially in or adjacent to riparian habitat (Wilson and Ruff 1999). It is solitary and prefers roosting in foliage of trees and tall shrubs, and it has been observed roosting under leaf piles during winter months in the Central Valley of California (Dave Feliz, pers. comm). Little is know about the biology and behavior of the western red bat, but migrating red bats (*Lasiurus borealis*), appear to travel in groups and forage in close association with one another in the summer (LaVal and LaVal 1979). Additionally, eastern red bats are highly migratory and males and females appear to migrate at different times and to different summer ranges, sometimes found at the mouth of caves in summer (Shump and Shump 1982). Some western red bats over winter in the San Francisco Bay Area (Western Bat Working Group 2005), and they also may over winter in the lowland riparian areas of the Los Angeles Basin. Little information is available about the dietary preferences of this species, but in British Columbia, the

western red bat prefers moths and also consumes beetles and grasshoppers (Nagorsen and Brigham 1993). They also may occur in arid grassland and desert environments while migrating.

Krutzch (1948) considered the western red bat to be common in the coastal plains of Southern California, although this species has shown an alarming decline since at least the mid-1900s, due primarily to habitat loss (Miner and Stokes 2005, Pierson et al. 2006). Recent bat surveys in the ANF failed to detect this species, although this species was detected in low frequency in neighboring San Bernardino and Los Padres National Forests (Miner and Stokes 2005) and along the Santa Ana River drainage (Pierson et al. 2006).

Northern Region: The Western red bat is unlikely to roost in the Northern Region, although stop-over roosting habitat (temporary roosting habitat during migration) is available. During reconnaissance surveys, suitable stop-over roosting habitat for the western red bat was observed at the Cottonwood Creek and Aqueduct Road crossing (within a large-diameter Fremont cottonwood tree) and approximately 950 feet north of proposed Segment 10A and 400 feet south of proposed Segment 10B (within several large tamarisk trees adjacent to several abandoned buildings). Because breeding is usually associated with well-developed riparian forests and trees in both areas occur in very isolated environments, western red bat is not expected to breed at these sites. There are no CNDDB (2007) records for the western red bat in the Northern Region of the proposed project, although there are a few historical observations of this species in Southern California deserts (Krutzsch 1948).

Central Region: The Western red bat is not expected to breed in the Central Region of the proposed project, because breeding normally occurs in valley riparian habitat associated with lowlands. However, suitable roosting habitat for the western red bat was observed in Upper Big Tujunga Canyon, approximately 900 feet west of Upper Big Tujunga Canyon Road and 0.8 miles north of the Angeles Crest Highway. One night of preliminary acoustical monitoring failed to detect this species within this site, composed of mature Coulter Pine Forest and Southern Alder and Willow Riparian Forest. The western red bat likely migrates through this area, potentially roosting in the foliage of the trees. There are no CNDDB (2007) records for the western red bat in the Central Region, although historically this species was considered common in the San Gabriel Mountains of California (Krutzsch 1948, Vaughan 1954).

Southern Region: The Western red bat likely roosts in the Southern Region. This species was detected with evidence of nearby roosting in Sycamore Canyon, Turnbull Canyon, Powder Canyon, Ecology Canyon, La Cañada Verde, and near Colima Road during bat surveys of the Puente Hills in 2004 and 2005 (Remington 2006). Suitable roosting habitat was observed during reconnaissance surveys near Segment 8, including 3 coast live oak woodland sites in the Chino Hills east of Highway 57 and one riparian forest site adjacent to the San Gabriel River in the Pico Riviera Bicentennial Park. A single night of preliminary acoustical monitoring failed to detect this species within these sites. There are no CNDDB (2007) records for the western red bat along the proposed project, although this species has been historically recorded in the northern portion of the Los Angeles Basin by Vaughan (1954) and MVZ (2007).

Los Angeles pocket mouse (*Perognathus longimembris brevinasus*). Federal Listing Status: Forest Service Sensitive Species; State Listing Status: Species of Special Concern. The Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) is a subspecies of the little pocket mouse that historically occurred in the Los Angeles Basin. Historic records of this species occur from San Fernando (Los Angeles County) east to the City of San Bernardino (San Bernardino County) and the San Gorgonio Pass (Riverside County), and southeast to Hemet and Temecula (southern Riverside County; Hall 1981). Williams (1986) recommended *P. l. brevinasus* as a high priority species of concern in California.

The Los Angeles pocket mouse is small-bodied and soft-furred with grayish yellow hairs (Ingles 1965). It inhabits open habitats with fine, sandy soils (Grinnell 1933) and is restricted to lower elevation grassland and coastal sage scrub habitats (Patten et al. 1992). In the San Bernardino Valley, this species was captured in sandy areas of chaparral, coastal sage scrub, alluvial fan sage scrub, desert scrub, and washes (San Bernardino County Museum 2007). This species is noted for its close association with sandy soils, particularly those associated with intermittent washes and dune formations (Dudek and Associates 2000).

Data on the population status of *P. l. brevinasus* are not available, likely because this species is often locally rare and difficult to census during long periods of dormancy (Williams 1986, Dudek and Associates 2000). Habitat loss and fragmentation due to urbanization, agriculture, sand and gravel mining, and flood control projects are the primary threats to Los Angeles pocket mouse populations (Dudek and Associates 2007). Small populations probably still exist in isolated parts of the historic range of *P. l. brevinasus* (Williams 1986).

Specific data is lacking for the Los Angeles pocket mouse along the proposed project. However, the remaining core population for *P. l. brevinasus* appears to be located in the inland valleys from San Bernardino south to the vicinity of Temecula (Dudek and Associates 2000). Captures of the Los Angeles pocket mouse in the 1990s occurred in the Anza Valley, Cactus Valley, at several locations along the San Jacinto River between Valle Vista in the south and the San Jacinto Wildlife Area in the north, east of the current terminus of Murrieta Hot Springs Road, along Highway 79 in the Temecula/Pauba Valley area, and in Moreno Valley near March Air Reserve Base and adjacent to Alessandro Avenue (Dudek and Associates 2000).

Food habits and diet of the Los Angeles pocket mouse are relatively unknown, although published information on the diets of little pocket mice (*Perognathus longimembris* ssp.), are presumably similar (Dudek and Associates 2000). Little pocket mice are primarily granivores that specialize on grass seeds (seed eaters; Ingles 1965; Patton 2005). Common plant species usually taken by little pocket mice found in the range of the Los Angeles pocket mouse include ripgut brome (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and purple needlegrass (*Nassella [Stipa] pulchra*), cudweed aster (*Lessingia filaginifolia*), and cotton-batting plant (*Gnaphalium stramineum*; Dudek and Associates 2000). Little pocket mice usually forage under shrub and tree canopies, and around rock crevices, in contrast to kangaroo rats (*Dipodomys* ssp.) and kangaroo mice (*Microdipodops* spp.), which tend to forage in more exposed areas (Brown and Lieberman 1973, Kenagy 1973).

There are little data on survivorship in the little pocket mouse populations. This species may live up to 8 years in captivity (Edmonds and Fertig 1972). In a wild population within the Joshua Tree National Monument (Riverside and San Bernardino Counties), a 30% survival rate was documented from one spring to the next (Chew and Butterworth 1964). This relatively low survival rate may be attributed to the initiation of torpor during the cold months. Over 3 winters in Owens Valley (Inyo County) survival rates of 82%, 56%, and 36% from autumn to spring was documented (Kenagy 1973). In the year of the highest survival, pocket mice were active all winter and the food supply was greater than the following 2 winters. During the following 2 winters, rainfall was below normal, food supplies relatively scarce, and individuals entered dormancy during winter (Kenagy 1973). Population peaks after wet winters were also reported in Bloeker (1928).

Northern Region: The Los Angeles pocket mouse is absent from the Northern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Northern Region.

Central Region: The Los Angeles pocket mouse is unlikely to occur within the Central Region. Marginally suitable habitat for this species was observed near the southern slope of the ANF during reconnaissance surveys. There are no CNDDB (2007) records of Los Angeles pocket mouse in the Central Region of the proposed project.

Southern Region: The Los Angeles pocket mouse is unlikely to occur in the Southern Region. Suitable habitat for this species was observed in Eaton Wash along Segment 11 and the eastern Puente and Chino Hills along Segment 8. There are 4 CNDDB (2007) records for the Los Angeles pocket mouse at least 5.5 miles northeast of the existing Mira Loma Substation.

Tehachapi Pocket Mouse (*Perognathus alticolus inexpectatus*). Federal Status: None; State Status: Species of Special Concern. The Tehachapi pocket mouse has a bi-colored body with light colored ears, a tri-colored tail and is medium-large in size for the genus. The mouse occurs in arid brush-steppe communities in the Tehachapi Mountains from Tehachapi pass (Kern County) to Mount Pinos (Ventura County) and Elizabeth and Quail lakes (Los Angles County) in small disjunct populations (Best 1994). It occupies flat grassy interspaces of Ponderosa pine forest, Joshua tree, oak savanna, and pinyon-juniper woodland. At lower elevations it occupies chaparral, coastal sage communities, and even non-native annual grassland. Burrows are constructed in sandy soils. Little is known about its natural diet, reproduction, or activity but like other silky pocket mice (*Perognathus* spp.), it likely eats mostly seeds, gives birth in June to August, and is nocturnal. Potential predators include owls, badgers, rattlesnakes, coyote, weasels, skunks, and foxes.

Northern Region: The Tehachapi pocket mouse may occur in the Northern Region. There are several CNDDB (2007) records in the Tehachapi Mountains, including one sighting approximately 4 miles west of the northern end of Segment 10. During reconnaissance surveys, suitable habitat was observed near the terminal ends of Segments 4 and 10.

Central Region: The Tehachapi pocket mouse is absent from the Central Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Central Region.

Southern Region: The Tehachapi pocket mouse is absent from the Southern Region. This region is outside the known range of the species, suitable habitat for the species is absent, and there are no CNDDB (2007) or other records for the species in the Southern Region.

Southern Grasshopper Mouse (*Onychomys torridus ramona*) and Tulare Grasshopper Mouse (*Onychomys torridus tularensis*). Federal Status: None; State Status: Species of Special Concern. There are 9 subspecies of southern grasshopper mouse with 2 California State Special Concern (CSSC) species in California: *Onychomys torridus tularensis* and *O. t. ramona*. The Tulare grasshopper mouse (*Onychomys torridus tularensis*) occurs in arid valleys and scrub deserts in the southern San Joaquin Valley. This species historically occurred from western Merced County and eastern San Benito County east to Madera County and south to the Tehachapi Range (McCarty 1975; USFWS 1998). Currently, its distribution is limited to the western margin of the Tulare basin, including western Kern County, the Carrizo Plain and the Cuyama Valley side of the Caliente Mountains in San Luis Obispo County, the Ciervo-Panoche region in Fresno and San Benito counties, and the Allensworth Natural Area in Tulare County (USFWS 1998). The other subspecies (*O. t. ramona*) is restricted to coastal Southern California, with marginal records for Mint Canyon west of Palmdale, San Fernando, Riverside, Valle Vista, Warner Pass, La Puerta Valley, Jacumba, Santee Mountains, and the mouth of the Tijuana River Valley.

The southern grasshopper mouse occurs in low arid scrub and semi-scrub vegetation in the Sonoran, Mojave, and southwestern Great Basin Deserts of California, Nevada, Arizona, New Mexico, and northwestern Mexico. Suitable vegetation types for this species include alkali desert scrub, succulent shrub, desert wash, montane chaparral, and riparian communities (McCarty 1975, Frank and Heske 1992), with particular preference for open microhabitats dominated by gopher mounds and small mammal burrows (Stapp 1997). The coastal subspecies (*O. t. ramona*) occurs in grasslands and sparse coastal sage scrub habitats (Dudek and Associates 2007).

The southern grasshopper mouse is unique among North American rodents in having a diet consisting almost exclusively of arthropods (Wilson and Ruff 1999). Common prey items include scorpions, beetles, centipedes, millipedes, arachnids, and grasshoppers, but small mammals are sometimes consumed (e.g., pocket mice, harvest mice). Southern grasshopper mice are nocturnal and active year round. Females give birth around May to July and males play a role in caring for the young (McCarty 1975). Predators include owls, badgers, rattlesnakes, coyotes, weasels, skunks, and foxes. This species occupies burrow systems abandoned by other small mammals (McCarty 1975).

Northern Region: Both subspecies of grasshopper mouse are unlikely to occur in the Northern Region. Suitable habitat was observed during reconnaissance surveys along Oak Creek and Cottonwood Creek near the terminal ends of Segments 4 and 10. However, these areas were more than several miles beyond

the current known range for both subspecies. There is one CNDDB (2007) record of Tulare grasshopper mouse (*O. t. tularensis*), approximately 3 miles north of the northern end of Segment 10.

Central Region: The southern grasshopper mouse may occur in the Central Region, but the Tulare grasshopper mouse is absent from this region. Limited suitable habitat for the southern grasshopper mouse was observed along the southern slope of the ANF in Eaton Canyon. There are no CNDDB (2007) records of grasshopper mouse (both subspecies) in the Central Region.

Southern Region: The southern grasshopper mouse may occur in the Southern Region, but the Tulare grasshopper mouse is absent from this region. Suitable habitat for the southern grasshopper mouse was observed in Tonner Canyon within the Chino Hills and undeveloped portions of the Puente Hills (both Segment 8). The nearest record for the southern grasshopper mouse approximately 9 miles southwest of Segment 8 near the Chino Hills.

American Badger (*Taxidea taxus*). Federal Status: None; State Status: Species of Special Concern. Badgers are fossorial animals and typically capture prey by digging them out of their burrows (Long 1973). They are well adapted to do so with their stout bodies, powerful forelimbs, and long-curved claws (Messick and Hornocker 1981). Badgers may also scavenge prey killed by other predators or prey on species that co-use their dens, such as cottontail rabbits (Snead and Hendrickson 1942), but Messick and Hornocker (1981) found that scavenging carcasses was not common. Badgers cache their prey in their dens (Snead and Hendrickson 1942), but caching has not been universally observed (Messick and Hornocker 1981). Foraging occurs throughout the year despite periods of days or weeks in the winter when badgers may not emerge from their burrows (Messick and Hornocker 1981).

Loss of large expanses of grassland habitats and other anthropogenic influences may be causing this species to decline in density and distribution along the proposed project. Although badgers do not have many natural enemies or predators, mortality from vehicles, eradication, and accidental poisoning are serious risks for the species. As habitat becomes more fragmented, it will become increasingly difficult for badgers to disperse to suitable habitat.

Northern Region: The American badger likely occurs in the Northern Region. Suitable habitat for this species was observed near the northwest end of Segment 5, south of West Avenue D near Segment 4, along Segment 10, and surrounding the Vincent Substation (including neighboring Segments 5, 6, and 11). American badgers have been recorded 5 miles northwest of the town of Mojave near Segment 10 (MVZ 2007), 4.5 miles east of Segment 10 near Willow Springs (CNDDB 2007), and 4 miles west of Segment 4 near Fairmont (CNDDB 2007).

Central Region: The American badger may occur in the Central Region. Although there are no CNDDB (2007) records for American badger in the Central Region, suitable habitat were observed along Kentucky Springs Wash of Segment 6. Suitable habitat also was observed within Gleason Canyon and along Aliso Canyon Road near Segment 11.

Southern Region: The American badger may occur in the Southern Region. Although there are no CNDDB (2007) records for American badger in the Southern Region, suitable habitat was observed between Turnbull Canyon and Powder Canyon within the Puente Hills and in Tonner Canyon within the Chino Hills (near Segment 8).

State Protected Species

Ringtail (*Bassariscus astutus*). Federal Status: None; State Status: Fully Protected Species. The ringtail is a fully protected species in the state of California, and is protected from taking by state regulations. Ringtails are mesocarnivores with a long and slender body form, similar to that of an American marten (*Martes americana*), with a thick black and white ringed tail approximately the length of the body. There are 14 described subspecies ranging throughout the west from southern Mexico, northward to southern Washington and eastward to southern Arkansas and northern Louisiana. Within their range, ringtails inhabit many habitats but are most often found in chapparal, rocky hillsides, and riparian areas. Ringtails den in rock crevices, talus, boulder piles, tree hollows, and underground. They are nocturnal, foraging for arthropods, fruit, birds, and mammals. Their average home range is 90 acres. Predators include great horned owls, coyotes, bobcats, and raccoons (Poglayen-Neuwall and Toweill 1988). Females give birth to 3 to 4 kits in May and June.

Northern Region: The ringtail may occur within the Northern Region. Although there are no CNDDB (2007) records for the ringtail in this region, suitable habitat was observed within Oak Creek at the northern end of Segment 10 and Amargosa Creek along Segment 5.

Central Region: The ringtail may occur within the Central Region. Although there are no CNDDB (2007) records for the ringtail in this region, suitable habitat was observed within the Upper Big Tujunga Creek drainage and immediately south of the West fork of the San Gabriel River (both near Segment 6).

Southern Region: The ringtail may occur in the Southern Region. Although there are no CNDDB (2007) records for ringtail in the Southern Region, suitable habitat was observed in Tonner Canyon within the Chino Hills near Segment 8.

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