#### 10.1 Plants

**Abram's Spurge** (*USFWS: None; CDFG: None; CNPS: List 2*). This prostrate annual (Family: Euphorbiaceae) is found on sandy flats in the Mohave and Sonoran Desert, at elevations below approximately 3,000 feet (Hickman, 1993; CNPS, 2009). Possible locations on the Eagle Mountain Pumped Storage Project (Project) would be the sandier soils in the Chuckwalla Valley, along the water pipeline. In the Project vicinity, there is an extant population just east of the Ford Dry Lake exit (CNDDB, 2008) that was observed in 2008 Project surveys. This species was not seen elsewhere in the 2008 or 2009 surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project). This may be largely due to its growth and flowering in the fall; most plant surveys are conducted in the spring, coincident with the growth and flowering of most California desert species.

**Arizona Spurge** (*USFWS: None; CDFG: None; CNPS: List 2*). This prostrate to erect perennial (Family: Euphorbiaceae) is found on sandy flats of the Sonoran Desert, below approximately 1,000 feet (Hickman, 1993). While CNPS locations are restricted to the western portion of the desert (CNPS, 2009), the species' range extends to Texas (Hickman, 1993). As such, possible populations could grow along sandier portions of the Project route, especially on the water pipeline north of Desert Center. This species was not seen on the 2008 and 2009 Project surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Ayenia** (*USFWS: None; CDFG: None; CNPS: List 2*). This perennial herb (Family: Sterculiaceae) is known from rocky canyons in Mojavean and Sonoran desert scrubs, below 1,600 feet (Hickman, 1993). The range includes Riverside, San Bernardino, and San Diego counties, Arizona, Sonora (Mexico), and Baja California (CNPS, 2009). There are several records in the vicinity of the Project (CNPS, 2009). Potential locations along the Project would be the upper bajada and in the area around the Central Project Area. This species was not seen on the 2008 and 2009 Project surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert

Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**California Ditaxis** (*USFWS: None; CDFG: None; CNPS: List 3; NECO: Special-status Species*). This herbaceous perennial (Family: Euphorbiaceae) is found in sandy loam soils, especially associated with the edges and low islands of runnels and washes (Karl pers. obs.). It has been recorded from southern San Bernardino County through much of Riverside County, to Arizona, and into Sonora, Mexico (CNPS, 2007). Reported elevations are approximately 2,000 to 3,000 feet (CNPS, 2009). During 2008 and 2009 Project surveys, many California ditaxis were found on the transmission line and water pipeline ROWs and in the Project vicinity (Tables 3-19 and 3-20, Figure 3.5-3). It is likely to occur on the Central Project Area as well. This species has generally not been sought on recent Project surveys along the transmission line routes because the species is a CNPS List 3 plant and is therefore not eligible for CEQA analysis. However, NECO has included this species as a special-status species, so it was sought in Project surveys.

**Cove's Cassia** (*USFWS: None; CDFG: None; CNPS: List 2; NECO: Special-status Species*). This subshrub (Family: Fabaceae) occupies sandy microsites (washes and slopes) in Sonoran Desert scrub habitats. It ranges from the Sonoran Desert scrub ecosystem in southeastern California (San Bernardino, Riverside, and Imperial counties) to Arizona, Baja California, and Sonora, Mexico. The elevational range is approximately 1,000 to 3,500 feet (CNPS, 2009). NECO records for this species are for the Chuckwalla Mountains and northeast in the Whipple Mountains (Figure 10-1), but CNPS (2009) has records for Chuckwalla Valley as well as other sites. Based on the geographic range, habitat associations, and previous surveys on this line, Cove's cassia could occur anywhere on the Project, especially on the route of the water pipeline. However, it was not observed on the 2008 and 2009 Project surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Crucifixion Thorn** (*USFWS: None; CDFG: None; CNPS: List 2; NECO: Special-status Species*). This much-branched, thorny shrub (Family: Simaroubaceae) is found on gravelly slopes in Mojave and Sonoran desert scrub vegetation, typically in association with drainages (Hickman, 1993). The species range is the southern Mojave and Sonoran deserts, from California east and south to Arizona and Sonora, Mexico.

Four populations were observed on the route of the water pipeline in 2009 Project surveys (Table 3-20, Figure 3.5-4). Another individual was found on the bajada south of the Central Project Area in the Eagle Mountain Landfill studies (County of Riverside and 10-2

BLM, 1996). There is potential for the species to occur on the Central Project Area. NECO records this species at 13 scattered locations throughout the NECO Plan Area. In 2002, this species was observed south of the Little Chuckwalla Mountains (BLM and IID, 2005). It was not observed in 2008 Project surveys or on previous surveys of the transmission line corridor (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Desert Sand Parsley** (*USFWS: None; CDFG: None; CNPS: List 2*). Desert sand parsley (Family: Apiaceae) is an annual herb that is known only from one location, at Hayfield Dry Lake (CNPS, 2009). It was last seen there in 1922. The macrohabitat is Sonoran Desert scrub, at 1,300 feet. The microhabitat is undescribed, with the exception that Hickman (1993) describes the occupied soils as heavy soil under shrubs. Since so little is known about this species it has the unlikely potential to occur within most of the Project's linear corridors. It was not observed on the 2008 and 2009 Project surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Desert Unicorn Plant** (*USFWS: None; BLM: None; CDFG: None; CNPS: List 4; NECO: Special-status Species*). This herbaceous perennial to subshrub (Family: Martyniaceae) is found throughout southern California deserts, east to Texas and south to Baja California and Sonora, Mexico (Baldwin et al., 2002; CNPS, 2009). It is associated with the warmer, wetter Sonoran Desert scrubs and subtropical thornscrubs below approximately 3,300 feet. Associated soils are generally considered to be sandy (Baldwin et al., 2002; CNPS, 2009; Karl, pers. obs.). Four plants were observed in 2009 Project surveys, on the pipeline ROW NECO (2002) identifies much of the NECO Planning Area as the range of this species (Table 3-20, Figure 3.5-4). The entire Project area is possible habitat for this species (NECO, 2002; CNPS, 2009).

**Dwarf Germander** (*USFWS: None; CDFG: None; CNPS: List 2*). This annual of the mint family (Lamiaceae) is found on sandy soils, in washes and fields, generally below 1,300 feet (Baldwin et al., 2002). The range includes the Sonoran Desert in California, to Texas and Baja, California. CNDDB (2009b) shows one location in the Project vicinity near Ford Dry Lake. While no plants were observed in either 2008 or 2009 Project surveys, habitat exists along the pipeline, especially in the lower reaches.

**Flat-seeded Spurge** (*USFWS: None; BLM: Sensitive; CDFG: None; CNPS: List 1B*). This prostrate annual (Family: Euphorbiaceae) is found on sandy flats and dunes in the Sonoran Desert, at elevations below approximately 350 feet (CNPS, 2009). The range

extends from the western boundaries of the Colorado Desert in California to western Arizona and northern Sonora, Mexico. It is known from only five sites in California, one of which (San Bernardino County) needs verification (CNPS, 2009). Possible locations on the Project would be the sandy soils on the route of the water pipeline, primarily north of Desert Center. This species was not observed on the 2008 and 2009 Project surveys or on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Foxtail Cactus** (*USFWS: None; CDFG: None; CNPS: List 4; NECO: Special-status Species*). This cactus typically grows in clumps of several, cylindroid, unbranched stems 4 to 6 inches long and covered in white, dark-tipped spines, 1/2-5/8 inches long (Benson, 1969). It occupies sandy to rocky soils in creosote bush scrub habitats in southeastern California, between 250 and 4,000 feet in elevation (Hickman, 1993).

In 2008 and 2009 Project surveys, well over 600 plants were observed on the route of the transmission line and water pipeline ROWs (Tables 3-19 and 3-20, Figure 3.5-5). Similarly, during the Eagle Mountain Landfill studies (County of Riverside and BLM, 1996), over 280 foxtail cacti were observed on the Central Project Area and bajada to the south. The species was also been observed on previous surveys in the Project vicinity (IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project). NECO (2002) identifies much of the NECO Planning Area as the range of this species.

**Glandular Ditaxis** (*USFWS: None; CDFG: None; CNPS: List 2; NECO: Special-status Species*). This herbaceous perennial (Family: Euphorbiaceae) is found from the Coachella Valley to Arizona and Sonora, Mexico at elevations below approximately 1,500 feet (Hickman, 1993; CNPS, 2009). Occupied habitats include sandy soils in Mojave and Sonoran creosote bush scrubs. This species is similar to other species of *Ditaxis*, but is thinly strigose and the leaf blades and sepals subtending female flowers are glandular-serrulate (Munz and Keck, 1968; Hickman, 1993). Aerial portions of the plant die back during dry periods; as such, it often is not evident during drought. One location near the Project is located south of Interstate 10 (Figure 10-1; NECO, 2002; CNDDB, 2008), so glandular ditaxis is possible on most of the Project site, with the exception of the upper bajadas near the Central Project Area. It was not observed during 2008 or 2009 Project surveys.

**Harwood's Eriastrum** (*USFWS: None; CDFG: None; CNPS: List 1B*). This annual phlox (Family: Polemoniaceae) is a newly described species, formerly treated as a subspecies or variety of *Gilia filifolia*, *Eriastrum diffusum*, and then a synonym of *E*.

*sparsiflorum*. In 2008, it's morphological, ecological, and geographic distinctions prompted separation into a separate species (Gowan, 2008). It is known only from sandy areas in eastern San Bernardino and Riverside counties (Gowan, 2008), including dunes (Karl, pers. obs.). CNDDB (2009a) shows a record in the vicinity of the Project near Ford Dry Lake, however. If this is a correct identification of the species, then Harwood's eriastrum may grow in the lower reaches of the water pipeline, although the soils are probably not sufficiently sandy. No individuals were observed in 2009 surveys.

Harwood's Milk-vetch (USFWS: None; CDFG: None; CNPS: List 2; NECO: Specialstatus Species). This annual herb (Family: Fabaceae) is known to grow in dunes and windblown sand in Mojave and Sonoran creosote bush scrubs, at 300 to 1,200 feet (Munz and Keck, 1968; Hickman, 1993); it is also found in soft sandy soils along dirt roads and in road shoulders (Karl, pers. obs.). Common associates include Chaenactis fremontii, Schismus arabicus, Plantago ovata, Abronia villosa, Oenothera deltoides, Cryptantha angustifolia, and Lotus strigosus (Karl pers. obs.). The geographic range includes northwestern Mexico, northeastern Baja California, southeastern Arizona, and southeastern California (Hickman, 1993; Felger, 2000). In California, reported locations are eastern Riverside, Imperial, and San Diego counties (CNPS, 2009). (See also Figure 10-1 for the range in the NECO Planning Area within the Project area.). Possible locations on the Project would be the sandy soils on the route of the water pipeline, primarily north of Desert Center. This species was not observed on the 2009 Project surveys or in 2008 Project surveys in the current Project area. It was observed in 2008 outside the current Project area and on several previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Jackass Clover** (*USFWS: None; CDFG: None; CNPS: List 2*). This annual herb in the caper family (Capparaceae) is an uncommon species of dunes, sandy washes, roadsides, and alkaline flats in Sonoran and Mojave Desert scrubs (Baldwin et al., 2002; CNPS, 2009). The range is southern California to Texas (Baldwin et al., 2002). Elevations are reported as 1,980 to 2,650 feet (Baldwin et al., 2002; CNPS, 2009), although CNDDB (2008) cites a record east of State Route 177 in Chuckwalla Valley at 445 feet. There are no aeolian habitats or playas near the Project, so the likelihood of the species on the Project is poor. It was not observed in 2008 or 2009 surveys. NECO cites a different variety of jackass clover, *W. refracta* var. *palmeri* for the dunes around Palen Dry Lake, east of the Project (Figure 10-1). Based on the CNPS (2009) electronic inventory, it is possible that the variety reported by NECO for Palen Dry Lake is actually *W. refracta* var. *refracta*.

Las Animas Colubrina (USFWS: None; CDFG: None; CNPS: List 2; NECO: Specialstatus Species). This medium-tall shrub (Family: Rhamnaceae) grows in Sonoran Desert creosote bush scrub below 3,000 feet (Hickman, 1993; CNPS, 2009) and is often associated with gravelly washes (Karl, pers. obs.). It is known from Riverside County south and east to Arizona and Mexico. Near the ROW, this species is known from Chuckwalla Valley area and Chuckwalla Bench (Figure 10-1). While it was not observed on the linear ROWs in 2008 or 2009 Project surveys, it could occur on or near the Central Project Area. It also was not observed on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Mesquite Nest Straw** (*USFWS: None; CDFG: None; CNPS: List 1A*). This annual herb (Family: Asteraceae) is known in California from a single 1930 collection at Hayfield Dry Lake. Its range also extends to southeastern Arizona and northeastern Sonora, Mexico (CNPS, 2007). Known occupied habitat is open, sandy drainages below 1,200 feet (Hickman, 1933). The lack of distinctly identified habitat and range precludes identification of specific portions of the route where the species may be growing. As such, the entire Project should be considered as potential habitat. This species was not observed in 2008 or 2009 Project surveys or on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Orocopia Sage** (*USFWS: None; BLM: Sensitive CDFG: None; CNPS: List 1B*). This species (Family: Lamiaceae) is known from Riverside and Imperial counties near the Chocolate and Orocopia mountains. The elevational range is approximately 100 to 2,800 feet (Hickman, 1993; CNPS, 2009). Habitat is varied Sonoran Desert scrubs, although known sites are gravelly to rocky alluvial fans and canyons. This species is currently known only from the Orocopia Mountains and was observed during the Eagle Mountain Landfill studies along the Eagle Mountain Railroad, on the bajada south of the landfill site (County of Riverside and BLM, 1996). (This sighting should be verified because of possible misidentification.) However, it was not observed in 2008 or 2009 Project surveys or on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Sand Evening Primrose** (*USFWS: None; CDFG: None; CNPS: List 2*). This erect annual or herbaceous perennial in the evening primrose family (Onagraceae) is known from sandy washes and rocky slopes in Sonoran Desert scrubs, below 1,300 feet (Baldwin et al., 2002). The species range includes southeastern California, southwestern

Arizona and northern Mexico. CNPS (2009) and CNDDB (2009a) list several records south and southeast of the Project. Based on their proximity, the species could occur on the entire Project. No individuals were observed in 2008 or 2009 Project surveys.

**Slender Woolly-heads** (*USFWS: None; CDFG: None; CNPS: List 2*). This annual herb (Family: Polygonaceae) grows in dune habitats in southern California, Arizona, and northwest Mexico (CNPS, 2009). Although the California observations for this species are all substantially west and south of the Project (CNPS, 2009), the geographic range of slender woolly-heads suggests that it may be found in Project vicinity. However, no habitat exists for the species on the Project. It was not observed in 2008 or 2009 Project surveys or on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Spearleaf** (*USFWS: None; CDFG: None; CNPS: List 2; NECO: Special-status Species*). Spearleaf (Family: Asclepiadaceae) is an herbaceous perennial occupying rocky desert scrub habitats from San Bernardino County south to Baja California and east to Texas (CNPS, 2009). Known elevations are approximately 1,400 to 3,600 feet (Baldwin et al., 2002; CNPS, 2009). Based on its habitat associations and geographic range, it is possible, albeit unlikely, on the upper bajada and ravines inside the Central Project Area. It was not observed in 2008 or 2009 Project surveys or on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Spiny Abrojo** (*USFWS: None; CDFG: None; CNPS: List 4; NECO: Special-status Species*). This uncommon shrub (Family: Rhamnaceae) is found in Sonoran Creosote Bush Scrub (Munz and Keck, 1968; Baldwin et al., 2002) in Riverside and Imperial counties, Arizona, and northern Mexico, at elevations of approximately 500 to 3,300 feet (CNPS, 2009). NECO reported that this species is most commonly associated with canyons and gravelly soils; 47 records were from the nearby Chuckwalla Bench and the Chocolate Mountains (Figure 10-1). It was not observed in 2008 or 2009 Project surveys but, based on habitat requirements and range, it is possible near and on the Central Project Area. It was not observed on previous surveys in the Project vicinity (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Wiggins' Cholla** (*USFWS: None; CDFG: None; CNPS: List 3; NECO: Special-status Species*). This cholla is thought to be a hybrid between pencil cholla (*Cylindropuntia ramosissima*) and silver cholla (*C. echinocarpa*). It needs further study (CNPS, 2009), but is currently not considered a species by either the U.S. Department of Agriculture

National Resources Conservation Service Plants Database (<u>http://plants.usda.gov</u>) or the Jepson Herbarium Cal Flora Project (<u>http://ucjeps.berkeley.edu</u>). However, this apparent hybrid is easily distinguished from pencil cholla because of its larger stems, and often from silver cholla by its narrower stems and shorter stature. Small individuals of silver cholla can easily be mistaken for Wiggins' cholla, however. During the 2009 Project surveys, numerous individuals identified as Wiggins' cholla were observed (Table 3-20, Figure 3.5-4), some of which probably were small silver cholla.

The species is found in Sonoran Desert scrubs below 3,000 feet and can occur on the entire Project.

## 10.2 Invertebrates

**Cheeseweed Owlfly** (*USFWS: None; CDFG: None*). This species occupies creosote bush scrub in rocky areas (Borror and White, 1970) and is often found near streams (CNDDB, 2001). *O. clara* has a larval stage that probably exceeds one year (AGFD, 2003), and an adult stage of roughly 3 to 4 days (Faulkner, 1990b; AGFD, 2003). The short-lived emergence of the adult in April or May appears to coincide with years of high winter precipitation (BOR, no date). *O. clara* resides in scattered locations throughout the deserts of southeastern California, western Arizona, and southern Nevada (Faulkner, 1990; Wiesenborn, 1998; Arizona Game and Fish Department [AGFD], 2003; Lower Colorado River Multi-Species Conservation Program [LCRMSCP] 2004). It has been collected in Imperial, Riverside, and San Bernardino counties, California; Yuma, La Paz, and Mohave counties, Arizona; and Clark County, Nevada (Wiesenborn, 1998; LCRMSCP, 2004). The species is known from relatively few, perhaps less than 15, scattered populations (Wiesenborn, 1998; AGFD, 2003); however, it undoubtedly has a more extensive distribution than is now known (Faulkner, 1990). Given the limited knowledge about its distribution, this species could be present on the entire Project.

#### 10.3 Amphibians

**Couch's Spadefoot** (*USFWS: None; CDFG: Species of Special Concern; NECO: Special-status Species*). This species is found from extreme southeastern California, to southwestern Oklahoma, and south across Texas into central Mexico and Baja California. Habitat includes shortgrass plains, mesquite savannah, creosote bush desert, thornforest, tropical deciduous forest, and other areas of low rainfall (Stebbins, 2003). These individuals remain in subterranean burrows for most of the year, emerging to breed in temporary pools after or during periods of rainfall, both winter rains and summer monsoons. Thus, breeding may occur from April or May to September. Breeding can also occur in slow streams, reservoirs, or ditches (Jennings and Hayes, 1994).

This species has the greatest potential to occur naturally along the eastern portion of the transmission line, based on its geographic range (Figure 10-2). However, the possibility that it may occur elsewhere on the Project should be considered. There are no artificial impoundments on the linears that could subsidize reproduction by providing breeding habitat. There may be temporary impoundments on the Central Project Area, such as in the mine pits following significant rain events and other water treatment facilities. Larvae of red-spotted toad (a non-sensitive native species) were observed at the bottom of the East Pit and in the reservoir just south of the East Pit in May 1990 by Brown (1990). They were also observed in 1993 in a pooled area of Eagle Creek Wash (ECE and MDU, 2001).

## 10.4 Reptiles

**Chuckwalla** (*USFWS: None; CDFG: None; NECO: Special-status Species*). The range of this lizard includes Utah and Nevada south to the west coast of Sonora and most of the east coast of the Baja Peninsula in Mexico (Stebbins, 2003). Chuckwallas are relatively common in areas of rock outcroppings and large boulders and are often seen basking on rocks in the sun.

Chuckwalla were detected during 2008 and 2009 Project surveys (Tables 3-19 and 3-20, Figure 3.5-6), during surveys for the Eagle Mountain Landfill (County of Riverside and BLM, 1996) and in most suitable rock outcrops in the Project region on previous surveys of the transmission line (Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project).

**Desert Rosy Boa** (*USFWS: None; BLM: Sensitive; CDFG: None*). Desert rosy boa inhabits primarily rocky sites in the southern Mojave and the Sonoran deserts of California and Arizona (Stebbins, 2003). While permanent water is not a requirement, this species can often be found near permanent or ephemeral streams. It is primarily a nocturnal species. On the Project, the most likely locations for desert rosy boa are near the Central Project Area (Figure 10-2).

**Mojave Fringe-toed Lizard** (*USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; NECO: Special-status Species*). This species can be found in the deserts of Inyo, San Bernardino, Los Angeles, and Riverside counties in California (Palermo, no date) at elevations from 300 to 3,000 feet (Stebbins, 2003). It inhabits Arizona in Yuma County south of Parker (Stebbins, 2003). (See Figure 10-2 for the range of the species in the NECO Planning Area; BLM and CDFG, 2002.) This species is restricted to loose,

windblown sand from dunes, flats, riverbanks, and washes, where vegetation, especially woody perennials, is often scant.

In the Project region, Mojave fringe-toed lizards have been observed from the Colorado River Substation west to approximately Graham Pass Road (EPG, 2004; Blythe Energy, 2004). Mojave fringe-toed lizards have also been observed in the aeolian soils near the Ford Dry Lake exit (Karl, pers. obs.). During 2008 Project surveys, several individuals were observed in that area. On the Project footprint, there is no Mojave fringe-toed lizard habitat.

# 10.5 Birds

**Bendire's Thrasher** (*USFWS: Bird of Conservation Concern; BLM: Sensitive; CDFG: Species of Special Concern; ABC: Watchlist of Birds of Conservation Concern; NECO: Special-status Species*). The breeding range of Bendire's thrasher extends from Guaymas, Sonora, Mexico to Utah, New Mexico, and Inyo County, California. Although migratory, this species may be a year-round resident in the southern portions of its range (Sinaloa, Mexico) (England and Laudenslayer, 1993). Occupied habitat includes fairly open areas with substantial vertical structure, such as washes and woodlands with scattered shrubs and trees (CNDDB, 2001; National Geographic Society, 2002). Rarely is dense vegetation used (England and Laudenslayer, 1993). NECO cites desert succulent scrub (e.g., *Yucca* spp. and columnar cacti) and microphyll woodland with palo verde trees as occupied habitats in southeastern California.

There is a substantial amount of open desert dry wash woodland on the Project's transmission line and Bendire's thrasher may be present (Figure 10-3). It was not observed during 2008 or 2009 surveys.

**Black-tailed Gnatcatcher** (*USFWS: None; CDFG: None*). The black-tailed gnatcatcher is a year-round resident in north-central and northwest Mexico, including Baja California, as well as southern California north to Inyo County and east to southwest Texas. It is normally found in arid lowland and montane scrub habitats, but is more typical of desert habitats, commonly among mesquite or creosote scrub, and particularly along washes or ravines (Terres, 1980; American Ornithologists' Union [AOU] 1998; National Geographic Society, 2002).

Black-tailed gnatcatcher is a common inhabitant of the arboreal washes of the region and is likely to be found on the entire Project site in appropriate habitat. It was observed during the spring 2008 surveys for the Project (Table 3-19, Figure 3.5-7). Because of its status change in 2009, it was not sought during 2009 surveys.

**Burrowing Owl** (USFWS: Bird of Conservation Concern; BLM: Sensitive; CDFG: Species of Special Concern; NECO: Special-status Species). This is an owl of open grasslands, prairies, deserts, and farms. It is also common on golf courses, road cuts, and ruderal sites in arid habitats and is highly subsidized in the broad agricultural valleys (e.g., Palo Verde Valley, Imperial Valley). It breeds from southern Canada south throughout much of the United States west of the Mississippi and Mexico, typically wintering in warmer areas. Nesting occurs primarily in burrows built by other species, including ground squirrels, kit fox, badger, and desert tortoise.

Burrowing owl was observed in 2009 Project surveys (Table 3-20, Figure 3.5-7) and could be found throughout the Project site.

**Crissal Thrasher** (*USFWS: Bird of Conservation Concern; CDFG: Species of Special Concern; NECO: Special-status Species*). The crissal thrasher is a resident of the southwestern United States at lower elevations from southern California north to southern Inyo County, southern Nevada, and extreme southwest Utah, and south into central Sonora and Chihuahua, Mexico. It is also found locally in the Mexican Plateau as far as central Mexico (AOU 1998). This species is fairly common in the Colorado River Valley, but has been in decline for decades in the Imperial, Coachella, and Borrego valleys (Dobkin and Granholm [no date]). BLM and CDFG (2002) do not identify any populations in the NECO Planning Area that are near the Project. The crissal thrasher is quite secretive by habit and may be found in riparian thickets and among dense vegetation, often mesquite or saltbush, in arid lowland and montane scrub (AOU, 1998; Ehrlich et al., 1988; National Geographic Society, 2002).

On the Project, there is no habitat along the linear ROWs. It may be on the Central Project Area, but even there is more likely to be a transient due to the probable lack of quality habitat.

**Ferruginous Hawk** (USFWS: Bird of Conservation Concern; BLM: Sensitive; CDFG: Watchlist; ABC: Watchlist of Birds of Conservation Concern; NECO: Special-status Species). This species is a winter resident in California and the southwest, into Mexico. It forages over open habitat, preying on rodents, rabbits, and other small prey.

This species has not been observed on other surveys in the Project area, although the entire Project constitutes winter foraging habitat for this species (Figure 10-3).

**Golden Eagle** (*USFWS: Bird of Conservation Concern; BLM: Sensitive; CDFG: Watchlist, Fully Protected; NECO: Special-status Species*). This species is a resident of foothill, mountainous, and open country, foraging over deserts, farmland, and prairies for

small mammals, snakes, and birds. It is a year-round resident throughout most of western North America. Nesting occurs in cliffs and large trees.

The entire Project constitutes foraging habitat for this species. While no nesting habitat occur onsite, the mountains adjacent to much of the Project, especially near the Central Project Area, may provide nesting sites. One individual was observed during the Spring 2008 surveys (Table 3-19, Figure 3.5-6).

**Loggerhead Shrike** (*USFWS: Bird of Conservation Concern; CDFG: Species of Special Concern*). Loggerhead shrike is widely distributed across the United States (National Geographic Society, 2002) and is a fairly common resident of the southwestern deserts (Schram, 1998). It occupies many habitats, including both native habitats and agricultural parcels. In California it may be found in desert, piñon-juniper woodland, savannah, grassland, ranches, and agricultural land (Small, 1977).

Loggerhead shrike is a relatively common desert resident and in each of the previous surveys in the Project area several individuals of loggerhead shrike were observed (Eagle Mountain Landfill EIS/R, Blythe Energy Project Transmission Line, IID Desert Southwest Transmission Project, Southern California Edison Devers Palo Verde II Transmission Line Project). Habitat for this species exists in the entire Project vicinity. Loggerhead shrike was observed during both Spring 2008 and 2009 surveys (Table 3-20, Figure 3.5-7), although the observation in 2008 was not close to the current Project location.

**Mountain Plover** (USFWS: Bird of Conservation Concern; BLM: Sensitive; CDFG: Species of Special Concern; ABC: Watchlist of Birds of Conservation Concern; NECO: Special-status Species). The geographic range of the mountain plover includes the plains of the west-central United States (breeding range) and the lower valleys and plains of central and southern California, Arizona, southern Texas, northern Mexico, and Baja California Norte (wintering range) (Knopf, 2006).

This species is associated with open, flat areas with low sparse vegetation, especially short-grass prairies or sparse habitats with patches of bare ground. Most birds winter in California on alkaline flats, cultivated fields, burned or heavily grazed grasslands, or post-harvest alfalfa fields (Rosenberg et al. 1991, Knopf, 2006). The largest wintering population is in Imperial Valley, and the species has been described as an "uncommon transient and irregular winter resident" of the lower Colorado River basin (http://www.lrca.org, 1999). (*See* Figure 10-3 for the range of the species in the NECO Planning Area; BLM and CDFG, 2002.)

This species is known from Palen Dry Lake (BLM and CDFG, 2002) but is unlikely to occur on the Project, except as winter visitor to agricultural fields.

**Northern Harrier** (*USFWS: None; CDFG: Species of Special Concern*). This is a hawk of open habitats, with the habit of flying close to the ground. It is relatively uncommon in the desert and in the area of the Project. It is primarily a winter resident.

This species has a low likelihood of occurrence on the Project, although one individual was observed in surveys for the Eagle Mountain Landfill (County of Riverside and BLM, 1996).

**Prairie Falcon** (*USFWS: Bird of Conservation Concern; CDFG: Watchlist; NECO: Special-status Species*). This species is a year-round resident of the western United States. (*See* Figure 10-3 for the range of the species in the NECO Planning Area; BLM and CDFG, 2002.) It inhabits open country, including deserts and prairies, occasionally hunting in woodlands. Nesting occurs in cliffs.

The entire Project constitutes winter foraging habitat for this species. The mountains adjacent to much of the Project may provide nesting sites.

**Short-eared Owl** (*USFWS: None; CDFG: Species of Special Concern; ABC: Watchlist of Birds of Conservation Concern*). This species is an uncommon winter resident of the southern United States into Mexico. It inhabits a variety of open-country habitats, including marshes, agricultural fields, deserts, and prairies. Short-eared owl also frequents areas intermixed with brush and woodland, provided there is ample open grassland to hunt (Glinsky, 1998). It both hunts over these habitats, chiefly at dawn and dusk, and roosts there during the day.

While not observed during surveys in the Project area, this species may be a winter resident on the entire Project.

**Sonoran Yellow Warbler** (*USFWS: Bird of Conservation Concern; CDFG: Species of Special Concern; NECO: Special-status Species*). This species frequents willows, poplars, and other streamside trees and shrubs, town shade trees, open woodlands, orchards, and moist thickets. The range for the species includes all of North America, south through Central America, and the West Indies to northern South America. The subspecies *sonorana* is confined to the Colorado River Valley from Nevada to Mexico, and possibly the Imperial Valley.

Habitat for this species on the Project is lacking on the linear ROWs, but may occur on the Central Project Area. One individual was observed at the Eagle Mountain townsite reservoir during 1990 surveys (County of Riverside and BLM, 1996).

**Vermilion Flycatcher** (*USFWS: None; CDFG: Species of Special Concern; NECO: Special-status Species*). Vermilion flycatcher occupies wooded or shrubby sites near water. Commonly associated trees are mesquite, willows, and cottonwoods. The species is mainly a resident from southern California to the southwestern tip of Utah, western and southern Texas, and south throughout Baja California, Mexico, Honduras, western South America, and the Galapagos Islands. BLM and CDFG (2002) do not identify any populations in the NECO Planning Area that are near the Project.

Habitat for this species on the Project is lacking except, perhaps, on the Central Project Area. Hence the species is unlikely to occur as a resident on the Project.

**Yellow-breasted Chat** (*USFWS: None; CDFG: Species of Special Concern*). The breeding range for the species includes most of the United States, slightly extending into Canada and Mexico. Nesting habitat is composed of dense, nearly impenetrable thickets in riparian or foothill situations (Ryser, 1985).

On the Central Project Area, the species may be transient. A transient individual was observed at the Eagle Mountain townsite reservoir during 1990 surveys (County of Riverside and BLM, 1996). Another was observed on the surveys for the Desert Southwest Transmission Line Project (BLM and IID, 2005). There is no habitat on the linear ROWs.

## 10.6 Mammals

American Badger (*USFWS: None; CDFG: Species of Special Concern; NECO: Special status Species*). American badgers are found on the flats and alluvial fans next to desert mountains (Hoffmeister, 1986). They occupy a wide variety of habitats in California, but open, uncultivated land appears to be a requirement (CDFG, 1986b).

Habitat is available for American badgers throughout the Project. Badger sign was observed during 2008 and 2009 Project surveys (Tables 3-19 and 3-20, Figure 3.5-6) and during 1989-90 and 1995 surveys for the Eagle Mountain Landfill (County of Riverside and BLM, 1996).

**Big Free-tailed Bat** (*USFWS: None; CDFG: Species of Special Concern; WBWG: Medium to High Priority*). This species is distributed from extreme southern California east to far western Texas, and south nearly to northeastern Argentina (Milner et al., 1990;

10-14

Constantine, 1998). There are also some isolated occurrences along the coast of California to San Francisco (Constantine, 1998), British Columbia, Kansas, and Iowa (Milner et al., 1990). *N. macrotis* is primarily an inhabitant of rugged, rocky country and has been found in rock crevices of cliffs and under boulders and rock ledges (Barbour and Davis, 1969; Jameson and Peters, 1988); it will also roost in buildings and occasionally in trees (Milner et al., 1990). Documented plant associations have included riparian woodland, desert scrub, desert dry wash woodland, evergreen forest, and mixed tropical deciduous and thorn scrubs (Hoffmeister, 1986; *see* review in Milner et al., 1990). Jameson and Peters (1988) reported that it was an uncommon resident in pinyon-juniper regions of the arid parts of California. Elevations in the United States are generally below 1,800 meters (6,000 feet) (Milner et al., 1990).

This species emits a distinctive echolocation signal, that is audible to some people. It has not been documented on the Project site, but if it occurred it would be in most likely be found near the high walls of the Eagle Mountain pits (P. Brown, pers. comm. to A. Karl).

**Burro Deer** (*USFWS: None; CDFG: Game Species; NECO: Special-status Species*). Burro deer are the desert subspecies of mule deer, occupying dense microphyll woodland habitat throughout the Colorado Desert where there are adequate water sources. While not a special-status species, it is a managed game species.

This species was observed in 2008 Project surveys well east of the current Project location and has been observed on other surveys in the Project area (EPG, 2004). While not observed in 2009, it is still possible, especially in the woodland and arboreal drainages on the transmission line and Central Project Area. (*See* Figure 10-7 for the range of the species in the NECO Planning Area per BLM and CDFG [2002].)

**California Leaf-nosed Bat** (*USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; WBWG: High Priority; NECO: Special-status Species.* California leaf-nosed bat occurs from southern Nevada, southern California, and western Arizona southward through Baja California Sur and Sonora, Mexico (Barbour and Davis, 1969). In California, it occupies the low-lying desert areas. It formerly inhabited the coastal basins of southern California, but populations have disappeared there due to loss of foraging habitat (CDFG, 1983). (*Also see* Figure 10-6 for the range of the species in the NECO Planning Area per BLM and CDFG [2002].) Occupied habitats include manmade structures (deserted mine tunnels, deserted buildings, bridges, culverts (Tatarian, 2001), and caves (CDFG, 1983). NECO notes that the two largest roosts are in mines in extreme southeastern California (BLM and CDFG, 2002). Temperature requirements restrict roosts to mines with temperatures of approximately 80 °F (BLM and CDFG, 2002).

During surveys for the Eagle Mountain Landfill, a population of California leaf-nosed bats was observed at Kaiser Mine between 1990 and 2000; none was found in any other locatable mines in the Eagle and Coxcomb mountians (Brown 1996, 2000). In the previous surveys, over 100 male and female bats used the Kaiser Mine in the winter, with fewer bats (mainly males) in the summer. In 1996, a re-survey found fewer animals, but there was summer maternity use and bats were found at Kaiser Mine, Black Eagle Mine, a U-shaped tunnel at the scales and a cylindrical building (Brown, 1996).

**Colorado Valley Woodrat** (*USFWS: None; CDFG: None; NECO: Special-status Species*). The Colorado Valley woodrat is a subspecies of the white-throated woodrat (*N. albigula*), inhabiting desert habitats in Imperial, San Diego, and Riverside counties. Occupied plant communities include creosote bush scrub, mesquite bosques, woodland, chaparral, and piñon-juniper, often where cholla (*Cylindropuntia* spp.) and prickly pear cacti (*Opuntia* spp.) are present (Hoffmeister, 1986).

Colorado Valley woodrat may be found throughout the Project, based on habitat associations (Figure 10-4).

**Mountain Lion** (*USFWS: None; CDFG: Species of Special Concern; NECO: Special status Species*). The puma is a large, uniformly colored, tawny to grayish cat with a brown-tipped tail. In the NECO Planning Area, it is found from Joshua Tree National Park (JTNP) to the Colorado River (Figure 10-4), in direct association with burro deer populations (BLM and CDFG, 2002).

While not previously detected on area or Project surveys, this species is possible throughout the Project area where microphyll woodland habitat supports burro deer, especially near mountains where lion coversites are present. Based on this, lions would be most likely on the transmission line ROW and Central Project Area.

**Nelson's Bighorn Sheep** (*USFWS: None; BLM: Sensitive; CDFG: None; NECO: Special-status Species*). Nelson's or desert bighorn are widely distributed from the White Mountains in Mono County to the Chocolate Mountains in Imperial County (CNDDB, 2001). They live most of the year close to the desert floor in canyons and rocky areas (Ingles, 1965). In summer, they move to better forage sites and cooler conditions in the mountains. Migration routes can occur across valleys between mountain ranges.

BLM management of desert bighorn sheep is guided by the *Mountain Sheep Ecosystem Management Strategy (EMS) in the 11 Western States and Alaska* (BLM, 1995). The EMS goal was to "ensure sufficient habitat quality and quantity to maintain and enhance viable big game populations, and to sustain identifiable economic and social

contributions to the American people" (BLM and CDFG, 2002). This management plan identified eight metapopulations, two of which are included in the NECO Planning Area: the Southern Mojave and Sonoran metapopulations. These metapopulations were further divided into demes, or populations. The Project is located in the Southern Mojave Metapopulation, adjacent to the Eagle Mountain deme and near the Coxcomb deme.

NECO further provides for enhancing the viability of these populations through maintenance of genetic variability, providing connectivity between demes, enhancing and restoring habitat, augmenting depleted demes, and re-establishing demes. To this end, a Bighorn Sheep Wildlife Habitat Management Area (WHMA) has been established that encompasses and connects the Eagle Mountain and Coxcomb demes (BLM and CDFG, 2002) (Figure 3.5-9).

Bighorn scat was observed at Central Project Area site during 1989-90 and 1995 surveys for the Eagle Mountain Landfill and during related Project surveys (County of Riverside and BLM, 1996). A 2-year study for the landfill project (Divine and Douglas, 1996) identified a reproductive population of 21±9 sheep overlapping the northern and western portion of the mine. Sheep were found within the landfill project boundaries in all four seasons, with ewes using the western end of the mine complex for lambing and other activities.

**Pallid Bat** (USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; WBWG: High Priority). The pallid bat is found in arid, low-elevation habitats from Mexico and the southwestern United States north through Oregon, Washington, and western Canada. It is found throughout most of California, where it is a yearlong resident (CDFG, 2005). (See Figure 10-6 for the range of the species in the NECO Planning Area; BLM and CDFG, 2002.) Antrozous pallidus occupies a wide variety of habitats, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. This species is most common in open, dry habitats below 200 meters (660 feet), with rocky areas for roosting (Findley et al., 1975; CDFG, 2005). While rock crevices, caves, and mine tunnels are common roosts, roosts may also include the attics of houses, eaves of barns, hollow trees, and abandoned adobe buildings (Davis and Schmidly, 1994). Pallid bats feed on large arthropods (scorpions, beetles, moths) captured on or near the ground. Although this species may be found in the absence of rocky terrain or water (Findley et al., 1975), water can enhance habitat due to he high proportion of protein in this insectivorous bat's diet and their high rates of evaporative water loss. Overall, accessible surface water, suitable maternity roost sites, and food may be important components of good habitat (Chung-MacCoubrey, 1995), although pallid

bats also occur in areas where there is never surface water (P. Brown, pers. comm. to A. Karl).

One pallid bat was captured and guano was observed at two adits west of the Project during 1990 surveys of the Eagle Mountain Landfill (County of Riverside and BLM, 1996). Based on available habitat, this species is possible near the Central Project Area. Because pallid bats roost often in rock crevices, any activities on site that result in disturbance of rock faces can have adverse consequences to this species.

**Pocketed Free-tailed Bat** (*USFWS: None; CDFG: Species of Special Concern; WBWG: Medium Priority; NECO: Special-status Species*). This species is found in arid lowlands of the southwest, ranging from Baja California and southwestern Mexico through southwestern Texas, southern New Mexico, south-central Arizona, and southern California (Kumairi and Jones, 1990; Pierson and Rainey, 1998). One source (California Department of Health Services cited in Pierson and Rainey, 1998) suggested that pocketed free-tailed bats could be expected anywhere in southern California south of the San Bernardino Mountains. (See Figure 10-5 for the range of the species in the NECO Planning Area; BLM and CDFG, 2002.) Reported elevation ranges include sea level to 2,250 meters (7,400 feet) (Kumairi and Jones, 1990).

Habitats used by the pocketed free-tailed bat include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis (CDFG, 1983). In several collecting studies in Texas, Arizona, and northern Mexico, *N. femorosaccus* was collected in pine (*Pinus*) – oak (*Quercus*) forests, floodplains and low, arid valleys in desert scrubs (creosote bush, giant dagger [*Yucca carnerosana*], candelilla [*Euphorbia antisyphilitica*], sotol [*Dasylirion leiophyllum*]) and in river plain arroyo habitats (mesquite [*Prosopis* spp.] and sycamores [*Platanus*]). Cliffs or hills with rocky ledges were always adjacent to the trapping sites (*see* review in Kumairi and Jones, 1990). In California, this species has been found only in the Lower and Upper Sonoran life zones, associated with creosote bush and chaparral habitats (Pierson and Rainey, 1998). *Pocketed free-tailed bat* roosts primarily in rock crevices or under boulders on slopes and cliffs (Cockrum, 1956; Barbour and Davis, 1969); it has also been observed to roost in buildings and under roofing tiles (Barbour and Davis, 1969; Jameson and Peters, 1988).

On the Project site, this species may be found in association with the Central Project Area, near the Eagle Mountains, especially in the vicinity of the pit high walls. Like *N. macrotus*, this species emits a distinctive echolocation signal and could be identified acoustically. Distinctive echolocation signals have been recorded in JTNP just west of the

Project area, and specimens have been collected in the Park (P. Brown, pers. comm. to A. Karl).

**Spotted Bat** (*USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; WBWG: High Priority*). Initially thought to be extremely rare, the spotted bat is now known to occupy a rather large range throughout central western North America from southern British Columbia to northern Mexico (Bat Conservation International, 2005) and possibly southern Mexico (Watkins, 1977). In the United States, it is most common in California, Arizona, New Mexico, southern Colorado, and southern Utah (Barbour and Davis, 1969). Occupied habitats in California are broad, ranging from below sea level in arid desert regions, through grasslands, to montane coniferous forests (Watkins, 1977). The species is apparently dependent on rock crevices in cliffs for refugia (Easterly, 1973, in Watkins 1977; Bat Conservation International, 2005). Foraging has been observed in forest openings, pinyon juniper woodlands, large riverine habitats, riparian habitat associated with small to mid-sized streams in narrow canyons, wetlands, meadows, and old agricultural fields.

Based on habitat associations, this species is most likely to occur on the Project near the pit walls of the Central Project Area.

**Townsend's Big-eared Bat** (*USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; WBWG: High Priority; NECO: Special-status Species*). Townsend's big-eared bat is found throughout western North America, from British Columbia south to Oaxaca, Mexico. (*See* Figure 10-5 for the range of the species in the NECO Planning Area [BLM and CDFG, 2002].) In California, *C. t. townsendii* inhabits the humid coastal regions of northern and central California and *C. t. pallescens* resides in the remainder of the State, including desert regions (Zeiner et al., 1990). The species is known from both mesic and desert habitats, coastal lowlands, cultivated valleys, and hills of mixed vegetation types (*see* review in Kunz and Martin, 1982). In California, the species has been encountered in every natural community in California except alpine and subalpine (Zeiner et al., 1990). Elevation limits range from sea level to above 3,160 m (10,000 feet) (*see* review in Kunz and Martin, 1982). The species has been found in limestone and gypsum caves, lava tubes, and human-made structures such as mine tunnels and buildings (Williams, 1986). Townsend's big-eared bat requires roosting, maternity, and hibernacula sites and may use separate sites for each behavior (Williams, 1986; Zeiner et al., 1990b).

Evidence of Townsend's big-eared bat was found at an Eagle Mountain underground adit during 1990 surveys of the Eagle Mountain Landfill (County of Riverside and BLM, 1996). Based on available habitat, this species is possible near the Central Project Area, where it would roost in mines and cave-like structures.

Eagle Mountain Pumped Storage Project Draft Final Environmental Impact Report January 2013 10-19

Western Mastiff Bat (USFWS: None; BLM: Sensitive; CDFG: Species of Special Concern; WBWG: High Priority; NECO: Special-status Species y). In the United States, western mastiff bat is found in California, Nevada, Arizona, Texas, and Mexico. In California, it is widely distributed, including significant populations in northern California, the central and southern coast ranges, and many Sierra Nevada river drainages, as well as southern California (Los Angeles, Imperial, Riverside, San Bernardino, and San Diego counties) (Constantine, 1998; Pierson and Rainey, 1998). (See Figure 10-5 for the range of the species in the NECO Planning Area; [BLM and CDFG, 2002].) It is a non-migratory resident of caves and buildings, but makes seasonal movements throughout the year (Jameson and Peeters, 1988). Mastiff bats prefer dry, open-country habitats, and because of their very large size appear to be unable to launch themselves from the ground. They require daytime roosts with crevices high enough to provide drop-off clearance for flight. These crevices can be in cliffs, trees, tunnels, or high buildings, usually with a minimum vertical drop of at least 20 feet (Barbour and Davis, 1969). For raising young, tight, very deep crevices are required in rock faces or buildings (Zeiner et al., 1990). After young are independent, colonies often rotate among alternate day roost locations (Barbour and Davis, 1969) depending on temperature or other microclimate factors. The western mastiff bat is non-migratory and active year round (Zeiner et al., 1990).

No western mastiff bats were observed during 1990 bat surveys of the Eagle Mountain Landfill (County of Riverside and BLM, 1996), but they were recorded during surveys conducted in February 2000 (Brown, 2000). Based on available habitat, this species is very likely to occur near the Central Project Area, where it could roost in the pit high walls. Distinctive echolocation signals have also been recorded in JTNP just west of the Project area, and in the Chuckawalla Mountains (P. Brown, pers. comm. to A. Karl).













