

APPENDIX K

BIOLOGY SPECIES SUMMARIES

SUMMARY OF SPECIAL STATUS WILDLIFE SPECIES POTENTIALLY USING LAND WITHIN THE ASSESSMENT AREA

Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is both federally and state listed as a threatened species with designated critical habitat located roughly 14 miles east of the project site (USFWS, 1984).

This species inhabits a variety of vegetative communities, which in the west Mojave contain creosote bush scrub, Mojave saltbush – allscale scrub, hopsage scrub, big galleta scrub, and Indian ricegrass scrub, among other vegetative communities. Communities of significant concern, such as creosote bush, saltbush, Joshua tree, Mojave yucca and cacti, are often present in the habitat along with other shrubs, grasses and wildflowers. Those areas used by the tortoise are as varied as the west Mojave landscape and include such areas as level flats, fans, mountainous slopes, rolling hills, sand dunes and lava flows (USFWS, 1994). The CNDDDB reports records of desert tortoise at EAFB greater than five miles from the project site (CNDDDB, 2001). The distribution of this species was considered in the 1996 EAFB assessment: Relative Density Estimates of Desert Tortoise on Edwards Air Force Base, California (EAFB, 1996). This report was not intended to establish species absence; however, the four transects conducted nearest the project site east and south of Rosamond Dry Lake detected no tortoise sign. Similarly, no tortoise sign was observed during walking surveys of the project site conducted for the Mojave ground squirrel habitat assessment in August 2001.

The desert tortoise is known to occur on the EAFB in Kern, Los Angeles, and San Bernardino counties, California, though several historic and recent population studies in the project assessment area have not detected recent tortoise sign on the western portion of the base (EAFB, 1996). The EAFB biologist reported no tortoise occurrences for the Paiute Ponds area or project assessment area (Reed, pers. comm.).

A focused review of desert tortoise research in the project area was conducted by Alice Karl (Karl, 2001). Ultimately, the combination of extensive poor and non-habitat in the project area plus survey results suggesting few, if any, tortoises in the area of the plant indicate that any population effects on tortoises would be negligible. The nearest area where relatively high tortoise densities are suggested from transect data are approximately ten miles to the northeast (Karl, 2001). Therefore, desert tortoise are believed to be absent from the project site.

Mojave Fringe-toed Lizard

The Mojave fringe-toed lizard (*Uma notata*) is a California Species of Special Concern. This species is an obligate sand-dweller found in dunes, sand fields, and sand deposits throughout the Mojave Desert in California (West Mohave Plan, 1999). This species is known to occur in “blowsand” ecosystems whereby the fluvial sand transport contributes to habitat formation. Habitat for the Mojave fringe toed lizard was found to occur in close association with sandy washes on the EAFB. The closest identified individual was located roughly 1.0 mile east of the Phase I project area near the western shoreline of Rosamond Dry Lake (EAFB, 1993a). Based on detailed ecological land classification maps of EAFB, the landforms and habitat available in the areas of species identification differs considerably from that in the Phase I project area. The extent of blowsand habitat at EAFB has not been determined with great precision (Draft West Mohave Plan, 1999), but appears to include upland environs on the western shoreline of Rosamond Dry Lake.

The Draft West Mohave Plan (1999) asserts that the construction of flood control barriers or windbreaks that potentially affect the air or water transport of sand should be monitored to address impacts to this species. Amargosa Creek and an unnamed blueline stream located 0.5 mile north of the Phase I project area are considered to contribute most of the sand inputs from in the Phase I project area to Rosamond Dry Lake and will not be modified by the proposed project.

Based on the absence of suitable habitat, this species is not expected to occur on the project site.

San Diego Horned Lizard

The San Diego horned lizard (*Phrynosoma coronatum blainvillei*) is a federal Species of Concern and California Species of Concern.

In the West Mojave, the San Diego horned lizard is restricted to juniper woodland, Mohave mixed woody scrub and chaparral habitats generally above 2,400 feet in elevation (West Mohave Plan, 1999; CNDDDB, 2001). This species prefers areas with loose, fine soils and generally open habitat with an abundance of native ants and other insects. The Antelope Valley is considered the northern portion of this species' distribution in the West Mohave Desert, which continues along the base of the San Gabriel and San Bernardino Mountain Ranges to Joshua Tree National Park (West Mohave Plan, 1999). This species has not been identified in the low-lying portions of the Antelope Valley or at EAFB (CNDDDB, 2001; EAFB, 1993a; 1993b). Based on the absence of suitable habitat this species is not expected on the project site.

Silvery Legless Lizard

The silvery legless lizard (*Anniella pulchra pulchra*) is a California species of concern. This species is found in sparse vegetation in beaches, dunes, chaparral, and streamside growth of sycamores, cottonwoods and oaks, and occasionally in desert scrub. This legless lizard burrows in loose soil near the base of slopes and near temporary or permanent streams. It forages in leaf litter under the overhang of trees and bushes on sunny slopes and under rocks and logs (Stebbins, 1985). Areas with sandy or loamy soil are essential for this species. Dunes or loose sandy habitats do not occur in the Phase I project area. Habitat for this species may occur in blowsand habitats and dunes located near Rosamond Dry Lake, but this species has not been identified during extensive surveys at EAFB (EAFB, 1993a; 1993b). For these reasons, silvery legless lizards are not expected on or near the project site.

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperi*) is a California Species of Special Concern that ranges over most of North America, and may be seen throughout California. It is more common as a winter migrant, and nesting pairs have declined throughout the lower elevation, more populated, parts of the state. The Cooper's hawk forages in open woodlands and wood margins and nests in tall trees, often in riparian areas (Ehrlich et al., 1988).

There are no records for this species in the Phase I project or at the Paiute Ponds (CNDDDB, 2001; EAFB, 1993a; 1993b), though potential nesting habitat occurs at the ponds. Cooper's hawks are occasionally reported at EAFB (EAFB, 1991), but their breeding status at the Paiute Ponds is not known. Based on these indications and the known breeding range for the species, Cooper's hawks are considered an unlikely breeder at the Paiute Ponds. No other portions of the project area provide habitat for this species.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a federal Species of Concern and California Species of Special Concern. The tricolored blackbird is endemic to California and breeds mostly in the Central Valley, although breeding in the Sierra Nevada and elsewhere have also been documented (CNDDDB, 2001). Tricolored blackbirds breed between mid-April and late July. They are colonial nesters utilizing freshwater marsh vegetation such as cattails, tules, and blackberry thickets, such as within the Great Valley Willow Scrub and Coastal and Valley Freshwater Marsh communities. This species has been known to forage both along edges of ponds in the immediate vicinity of the nest site and in grasslands and croplands up to 4 miles from the nest site. Because of the ephemeral nature of the habitat, these blackbirds typically nest in different locations from year to year. A tricolored blackbird nesting colony

was identified at Paiute Ponds in 1992 (CNDDDB, 2001). The dense cattail and tule stands provide excellent breeding habitat for this species.

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is a California Species of Special Concern and a state fully protected species. This species is protected under the federal Bald and Golden Eagle Protection Act.

The golden eagle occurs throughout much of California and has been observed in the project region incidental to focused surveys for special status species (EAFB, 1991; 1993a). The golden eagle is a widespread species in mountainous areas in the West Mojave Desert, with important nest sites at the China Lake NAWS, the Eagle Crags, and southern Sierra Nevada Mountains (West Mojave Plan, 1999). This large, wide-ranging predator frequents open habitats, especially in mountains or hilly country. It nests on cliff faces or in large trees with nests frequently used for many years by the same breeding pair. The breeding territory of this species may range from 20 over 100 square miles with small to medium sized mammals as the primary food source (West Mojave Plan, 1999). This species is identified as a “covered species” in the West Mojave Plan, with threats to this species identified from human disturbance at nest sites and shooting as a minor threat. The biological goal for this species identified in the West Mojave Plan (1999) is to preserve all nest sites. The take of foraging habitat was not identified as a potential threat to golden eagle. Nesting sites do not occur in the general project vicinity.

Short-eared Owl

The short-eared owl (*Asio flammeus*) is a California species of special concern. This species requires dense vegetative cover such as tall grasses and freshwater emergent vegetation for roosting and resting. Nesting occurs from April through July, with nests constructed on dry ground in depressions concealed by dense vegetation. Site surveys were not intended to identify the presence or absence of this species. The dense tules, water smartweed, and other emergent vegetation associated with the Paiute Ponds provide suitable nesting and foraging habitat for this species. Members of this species usually arrive in California in September or October and stay until April, although this species occasionally still breeds in northern California. A 1932 record of this species is reported by the CNDDDB from Rosamond Dry Lake (CNDDDB, 1999). More recently, incidental observations of short-eared owls have been reported at EAFB (1993a). Nesting habitat for this species is limited to the area surrounding the Paiute Ponds, with foraging habitat present in portions of the Phase I project area closest to the ponds.

Long-eared Owl

The long eared owl (*Asia otus*) is a California Species of Special Concern. This species nests in coniferous and mixed coniferous deciduous forests, especially near water bodies (Ehrlich et al., 1988). The willow and cottonwood riparian groves of the Paiute Ponds provide suitable nesting sites. Because the owls disperse widely, migrate long distances, and appear to exhibit low fidelity to individual nest sites, the protection of woodland habitat is considered more important than protection of individual nest sites for the conservation of this species (West Mohave Plan, 1999). Incidental occurrences for this species are reported at EAFB (1993a). Nesting habitat for this species is limited to the area surrounding the Paiute Ponds, with foraging habitat present in portions of the Phase I project area closest to the ponds.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California Species of Special Concern and is protected under the federal Migratory Bird Treaty Act. Burrowing owls are year-round residents of the Central Valley, as well as other areas of open, dry grassland and desert habitats. They are frequently found in open grasslands and shrublands where perches and suitably sized rodent burrows are available for nesting and shelter, particularly California ground squirrel burrows. Burrowing owls are opportunistic feeders, preying primarily on insects and other arthropods, but also prey on small mammals, reptiles, birds, and carrion (Zeiner et al., 1990). Breeding takes place from March through August, with peak in April and May (Zeiner et al., 1990).

Occurrences of burrowing owls off-site in the project vicinity are limited to eleven fledgling owls identified six miles west of the project area (CNDDDB, 2001). Owls have not been documented during EAFB surveys or surveys of the Paiute Ponds area in the project vicinity. The December 2000 and August 2001 reconnaissance surveys indicate that burrow availability may be limited in areas located west of SR-14. Only two kit fox-sized burrows were identified during walking surveys of the Phase I project area with no other suitably sized burrows identified. However, suitable habitat may occur in and surrounding agricultural lands west of SR-14 and owls may occasionally forage and potentially nest in the Phase I project area in undiscovered burrows. The burrowing owl home range, or geographic area over which the owls habitually wander, has been documented in the range of 0.1 to 4 acres per nesting pair, with greater variations found elsewhere (Thomsen, 1971). At a minimum, the Phase I project area provides suitable foraging habitat for burrowing owls and may be within the home range for owls that nest off-site and forage on the project site.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a State-listed threatened species that has suffered substantial population declines over the past century. Swainson's hawks in California breed mostly in the southern Sacramento and northern San Joaquin Valleys, but also breed in Sierra Nevada valleys in Inyo and Mono counties and elsewhere. This hawk typically nests at the edge of narrow bands of riparian vegetation, in oak woodland, and in lone trees, roadside trees, and farmyard trees (England et al., 1997).

Pair formation begins on return to the nesting grounds, which can be as early as March in central California. Foraging areas include grasslands and various agricultural lands, including wheat and alfalfa. In the Central Valley, Swainson's hawks often forage in row, grain, and hay crops. However, these hawks cannot forage in most perennial or annual crops that grow higher than native grasses, apparently because they cannot locate their prey in higher cover. During nesting, prey consists primarily of mammals. In California, voles are an important part of the diet (Estep, 1989), which can also include ground squirrels, pocket gophers, and deer mice (England et al., 1997).

Swainson's hawks were not observed during surveys of the Phase I project area in August 2001, which occurred after young Swainson's hawks would ordinarily have left the nest. However, Swainson's hawks have been observed on EAFB and in the Paiute Ponds area (EAFB, 1991; 1993a). Nesting has not been identified at Paiute Ponds but occurs in agricultural areas roughly six miles west of the Phase I project area. Swainson's hawks are potential foragers in the upland portions of the project area, and unlikely nesters, with the exception of the Paiute Ponds area where Fremont's cottonwood, willow, and other trees provide nesting habitat.

Northern Harrier

The northern harrier (*Circus cyaneus*) is a California Species of Special Concern and has no federal status. The CDFG has expressed concerns about the general decline in northern harrier nesting habitat.

Northern harriers breed throughout most of California, nesting on the ground, usually in emergent wetlands or along rivers and lakes. However, they may nest in grasslands, grain fields, or sagebrush flats several miles from water (Zeiner et al. 1990). These hawks feed primarily on small mammals such as voles (*Microtus* sp.), along with birds, frogs, small reptiles, and insects. In Michigan, breeding home ranges averaged 1,000 acres (Zeiner et al., 1990). Northern harriers were not observed during the December 2000, and May and August 2001 site visits; however breeding is expected in the marshlands surrounding the Paiute Ponds. Northern harrier may potential forage in the upland portions of the project area and nest at the Paiute Ponds. No other nesting habitat occurs in the project area.

Western Snowy Plover

The western snowy plover (*Charadrius alexandrinus nivosus*) is a federal threatened species and California Species of Special Concern. The western snowy plover nests in the West Mojave on certain alkali playas and wetland areas, which include Rosamond Dry Lake and the Paiute Ponds (CNDDDB, 2001). Nesting sites consist of a simple scrape marked with twigs, debris, and grass tufts lined with bird of concealing ornaments (Ehrlich et al., 1999). The West Mohave Plan (1999) documents that this species nests with regularity on EAFB at the Paiute Ponds. Thus, implementation of the Phase I project as it relates to the long-term management of the Paiute Ponds is a management concern, particularly in regard to the availability of nesting sites and forage.

The distribution of breeding habitat around the ponds is not fully known, however, nesting may occur on the surrounding levees, on the dry desert claypan below the levees, and on Rosamond Dry Lake. During the course of a week, overflows from the Paiute Ponds to Rosamond Dry Lake in the spring and early summer may provide foraging habitat to tens of thousands of shorebirds. During this overflow period, birds concentrate in the area between the Paiute Ponds and the Rosamond Dry Lake edge (Garrett pers. comm. 2001). Western snowy plover are expected to forage extensively in this area, especially if nesting near the Paiute Ponds wetland complex. The continued compatible management of Paiute Ponds as western snowy plover habitat is a main conservation strategy of the West Mohave Plan (1999).

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) is a California fully protected species and has no federal status. White-tailed kites are year-round residents in the coastal valleys and lowland areas and may breed seasonally at the Paiute Ponds. They are frequently found in association with cleared or cultivated areas and breed in a variety of habitats. The characteristics of the nesting site do not appear to be as important as the availability of a nearby food source, with voles (*Microtus* sp.) and other small rodents as their primary food source. This species nests on the slender branches or crowns of trees, not preferring any particular tree species for nesting. They nest from February through October. The CNDDDB does not report any nesting occurrences for this species from the project area; however, the combination of nesting habitat at Paiute Ponds and available agricultural forage lands located west of SR-14 provide suitable habitat for this species. White-tailed kites have been identified at EAFB (EAFB, 1991).

The open shadscale scrublands in the Phase I project area provide foraging habitat for this species with no suitable nesting locations. The larger trees at the Paiute Ponds provide could potentially provide suitable nesting habitat for white-tailed kite. Thus, kites are potential foragers in the upland portions of the project

area and unlikely nesters, with the exception of the Paiute Ponds area where Fremont's cottonwood, willow, and other trees provide nesting habitat.

California horned lark

The California horned lark (*Eremophila alpestris actia*) is a California Species of Special Concern. This species is a year long resident in most of California except the Sierra during winter. It is a widespread resident along the California Coast Range, including portions of the San Joaquin Valley, from Humboldt County south to Baja California. This species is an abundant resident of grassland and desert scrub habitats and is found throughout the Mohave Desert.

The California horned lark is usually found in open habitat, such as grassland and agricultural areas, where trees and shrubs are absent. It uses grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities as protective cover from predators. The California horned lark nests in dry grasslands and rangelands that provide low, sparse cover (e.g., grazed, mowed, or barren areas without trees and shrubs) between March and July. Foraging habitat includes open grasslands and scrublands where insects and seeds are abundant.

In both December 2000 and August 2001, flocks of at least 50 California horned larks were observed foraging in the Phase I project area east of SR-14. Nesting habitat is available throughout the undeveloped portions of the project site.

Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) is a California Endangered species and is protected by the federal Migratory Bird Treaty Act. This large falcon occurs in California both to breed and as a winter visitor. The peregrine falcon nests on cliffs and often on artificial structures such as buildings or bridges that provide a platform for egg laying, and rarely nests on trees or nest cavities. Nests are typically located near wetlands, lakes, or other bodies of water. They feed primarily on birds, which are usually captured in flight. The home range for this species can encompass an area as large as 125 square miles, largely depending upon prey availability. Peregrine falcons have been observed in the project vicinity on EAFB and in the general project region (West Mohave Plan, 1999; EAFB, 1991; 1993a).

Prairie Falcon

The prairie falcon (*Falco mexicanus*) is a California species of special concern. Prairie falcons nest in rugged mountain ranges with cliffs often within 0.5 miles of water and are found throughout the West Mohave Desert (West Mohave Plan, 1999). This species forages in dry open terrain such as open grassland and chaparral, but also fallow agricultural lands and pastures (Grinnell and Miller, 1944). The prairie falcon does not migrate as far as other falcons, but in winter will disperse to areas where steady food sources are available. The main threat identified to this species is human disturbance of nesting sites (West Mohave Plan, 1999). This species may use upland portions of the project site in their search for food, but the use would be incidental.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is a federal and State-listed Endangered species. This species is reported by the USFWS (2001) as a potentially occurring species in the Antelope Valley region. This species utilizes most of California's lakes, reservoirs, river systems, and coastal wetlands. Bald eagles typically forage on large bodies of water or free flowing rivers with abundant fish. Although fish are the primary food source, bald eagles will also opportunistically hunt sick or wounded ducks across water and feed on carrion. Nesting or foraging habitat for this uncommon migrant is not likely in the Phase I project area.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is a California Species of Special Concern. This bird is common year-round throughout California lowlands where resident birds are augmented by winter migrants. The loggerhead shrike prefers open habitats with scattered perches such as fences, posts, utility lines, shrubs, and trees.

Two loggerhead shrikes were observed in the Phase I project area in December 2000, their breeding status on the site and whether or not these birds were migrants is not known. The shadscale scrub vegetation community and abundant fences in the project area would likely provide suitable nesting habitat for loggerhead shrike. East of SR-14, the patchwork of agricultural fields and shadscale scrub habitats are highly suitable for this species.

Le Conte's Thrasher

Le Conte's thrasher (*Toxostoma lecontei*) is a federal Species of Concern and California Species of Special Concern. This species is widespread throughout the West Mohave Desert, favoring areas with cacti, Joshua trees and desert washes, especially those with creosote bush (West Mohave Plan, 1999; Ehrlich et al., 1988). This resident species is also described from alkali desert scrub and desert succulent scrub habitats such as those in the Phase I project area and near the Paiute Ponds. Two species occurrences are reported from the Rosamond Hills, more than 5 miles north of the Phase I project area with no nearby occurrences in the Paiute Ponds area. Surveys at EAFB conducted in 1992 and 1993 confirmed the presence of Le Conte's thrasher in three of sixty wildlife transects with the closest located occurrence again located greater than five miles from the Phase I project area in the Rosamond Hills (EAFB, 1993a; 1993b).

The West Mohave Plan (1999) notes that the conservation of large contiguous land areas should be a primary goal for species conservation. The absence of Le Conte's thrasher sightings in the project area, while not an indicator of species absence, provides a relative indication of the value of the site to this species. The desert scrub habitat that occurs in the Phase I project area is considered to meet the habitat requirements for Le Conte's thrasher.

Mohave Ground Squirrel (*Spermophilus mohavensis*)

The project area is located within the historic range of the Mohave ground squirrel. The western boundary of the range as currently understood is along the Highway 14 corridor just west of the project area. However, in general, the habitat in the project area appears to be of marginal quality for Mohave ground squirrels. While soils are suitable, both the shrub and herbaceous vegetation show low suitability for the species. Shrub cover is low over most of the the area, most shrubs are quite small, and the two most important forage species are not present. Herbaceous cover and standing crop are strongly dominated by alien grasses and forbs that rarely appear in the Mohave ground squirrel diet (Leitner, 2001). The potential for encountering the squirrel within the proposed storage reservoir area or eastern agricultural area is minimal due to the habitat's poor suitability. However, little is known about the life history of this species, and early findings suggest that Mohave ground squirrel habitat is not as described in the literature. Therefore, Mohave ground squirrel could potentially be present within the project boundaries.

American Badger

The American badger (*Taxidea taxus*) is a California Species of Special Concern. The range of the American badger includes most of the State, with the exception of the northwestern forests. Badgers occupy a variety of habitats, including grasslands, savannas, and mountain meadows where soils are suitable for digging for their preferred prey, large rodents such as ground squirrels, gophers, and kangaroo rats. Badgers have been identified on EAFB in close proximity to Rosamond Dry Lake and are considered present in the general project vicinity. No suitably sized burrows or other habitat were noted in the Phase I project area during the December 2000, or May or August 2001 site visits that would support this species; however, a reconnaissance of the entire project area was not possible thus the presence of this species cannot be ruled out.