CHAPTER 12

BIOLOGICAL RESOURCES

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This section describes the biological resources in the project area and evaluates the potential impacts of the proposed project on those resources. The assessment area includes the PWRP, the PWRP EMS (leased from LAWA), and the Initial Study Area shown on Figure 12-1. ESA conducted reconnaissance surveys of the roughly 86-square mile project area in January 2005, to gather information on vegetative communities, wildlife habitats and habitat use within the Initial Study Area. Vegetation types and wildlife habitats were characterized on the basis of both records and field observations.

ENVIRONMENTAL SETTING

Methodology

Wildlife biologists from ESA conducted general biological reconnaissance surveys of the PWRP, PWRP EMS, and the Initial Study Area on January 5, 6, 7, and 27, 2005. The purpose of the field reconnaissance surveys was to evaluate habitat quality and the potential to support biological resources in the Initial Study Area. These field surveys consisted of driving all accessible paved and unpaved public roads along topographic section lines within this area. Vegetation community and habitat boundaries within each topographic section were mapped by photo interpretation, using the data recorded during the field survey. See Appendix N for greater detail of the survey methodology. The biological resources present, or possibly present, in the Initial Study Area were determined from biological reconnaissance surveys and a review of the following sources:

- Special-status species records from the DFG California Natural Diversity Data Base (CNDDB).[1]
- Species information from the USFWS.[2]
- Special-status species records from the California Native Plant Society's (CNPS) Electronic Inventory.[3]
- Previous biological reports for the airport planning area and vicinity and technical reports for the PWRP EMS.[4]
- An EIR and focused special-status plant and wildlife studies recently conducted for the LWRP 2020 Plan.[5]
- Planning documents for the project region.[6]

Descriptions of plant communities in the Initial Study Area follow DFG's plant classification system.[7] This classification system is similar in structure to previous DFG classification systems (e.g., Holland, 1986), but is based on the Sawyer and Keeler-Wolf (1995) plant classification system. This classification system is a hierarchical treatment of vegetation communities/wildlife habitats that describes natural communities, naturalized communities, invasive plant associations, and human-influenced and urban landscapes. The vegetation generally correlates with wildlife habitat types.

Initial Study Area

The Initial Study Area is located in the western Antelope Valley in the Mojave Desert region of the California Floristic Province[8] and within the Pacific Flyway. The PWRP includes two facilities located several miles east of the City of Palmdale, California, surrounded by LAWA property. Land uses in the vicinity of the PWRP include agriculture, open space,

1 *DFG, 2004.*
2 *USFWS, 2005.*
3 *CNPS, 2005.*
4 *Leitner, 2002 and 2003; ESA, 2003 and 2004; and Karl, 2003.*
5 *District No. 14, 2004.*
6 *BLM, 2003; USFWS, 1994a and 1994b.*
7 *DFG, 2002.*
8 *Hickman, 1993.*

aircraft industry, and a small golf course. The PWRP EMS leased from LAWA is located between USAF Plant 42 and Little Rock Wash and primarily includes lands under agriculture.

The Initial Study Area encompasses the eastern portion of LAWA property, portions of the Cities of Palmdale and Lancaster, and unincorporated areas of the County. This area is located in a primarily rural, agricultural portion of the Antelope Valley, consisting of predominantly open space, farmland, and low-density, single-family residences. The Initial Study Area generally is surrounded by Little Rock Wash to the west; open space, residential, and light commercial development associated with the town of Littlerock to the southwest; Big Rock Wash and designated open space areas to the southeast and east; and primarily agricultural development to the north.

Biotic Habitats within the Initial Study Area

For purposes of assessing biological resources, an area of approximately 86 square miles was evaluated at a reconnaissance level. The reconnaissance surveys identified six general habitats within the Initial Study Area: agricultural areas, developed areas, saltbush scrub, creosote bush scrub, desert wash scrub, and Joshua tree woodland. Habitat types within the Initial Study Area are shown in Figure 12-1.

Agricultural Areas

Agricultural areas within the Initial Study Area include alfalfa fields and other areas currently under intensive agriculture, barren and disturbed and weedy habitats, and areas previously cleared that exhibit initial shrub re-establishment. Initial shrub re-establishment primarily included patches of tumbleweed (*Salsola tragus)*, rabbitbush (*Chrysothamnus* spp.) and/or saltbush (*Atriplex* spp.). These areas are mapped as "Agricultural" and "Cleared" in Figure 12-1. Comprising approximately 40 percent of the Initial Study Area, these lands were found scattered throughout with concentrations in the northern and western parts of the Initial Study Area.

Developed Areas

Residential, commercial, industrial, and certain public facilities development within the Initial Study Area were considered developed habitat. Vegetation within developed areas primarily was restricted to ornamental trees and shrubs, lawns, gardens, and flowerbeds. These areas are mapped as "Built" in Figure 12-1. Mapped developed areas include the aircraft industrial facility towards the western edge of the Initial Study Area, the existing PWRP sites, the Desert Aire Golf Course, and clustered housing in the area of 90th Street East and Avenue J (smaller developed areas, principally individual residential and commercial units found throughout the study area, were not mapped). Built areas mapped in Figure 12-1 comprise between one and two percent of the Initial Study Area and are concentrated mostly in its westernmost portion.

Saltbush Scrub

Saltbush scrub habitat found in the Initial Study Area can be broadly classified as desert saltbush scrub following Holland's classification methodology (1986). This plant community type is usually strongly dominated by one of several species of saltbush (*Atriplex* spp.), with other characteristic species including spiny hopsage (*Grayia spinosa*), cheesebush (*Hymenoclea salsola*), and boxthorn (*Lycium* spp.). Desert saltbush scrub is found in poorly drained alkaline and/or saline soils, widely distributed above and on the margins of dry desert lake beds in the Mojave, Great Basin, and Colorado deserts.

Saltbush scrub usually is composed of fine scale mosaics of vegetation series and associations with different component species becoming dominant. It is dependent on small changes in topography and water table depth.[9] Although only a small sample of areas were examined in detail during the field surveys, it appears that the fourwing saltbush series, dominated by *Atriplex canescens*, and the allscale series, dominated

[9] *Sawyer and Keeler-Wolf, 1995.*

by *A. polycarpa*, are common components of the desert saltbush scrub community found in the study area. Given the size of the Initial Study Area, it is likely that other series are represented.

Other plant species observed in this community type in the study area include spiny hopsage, winterfat (*Kraschennikovia lanata*), Cooper's boxthorn (*Lycium cooperi*), Anderson's boxthorn (*L. andersonii)*, goldenhead (*Acamptopappus* sp.), desert mallow (*Eremalche exilis*), pincushion flower (*Chaenactis fremontii*), fiddleneck (*Amsinckia tesselata)*, schismus (*Schismus arabicus*), and an assortment of nonnative herbaceous annuals, particularly filaree (*Erodium cicutarium and E. botrys*).

Desert saltbush scrub is found in patches throughout the Initial Study Area. In the southeast, it is found in a mosaic along with Mojave creosote bush scrub (broken up by cleared agricultural parcels) in a broad horseshoe pattern around the slopes gradually rising to the buttes east of the project area. Moving to the west and north, saltbush scrub is the most prevalent plant community in areas that have not been cleared for agriculture. Four relatively intact blocks of moderate to high quality saltbush scrub habitat remain, one each to the southwest and northeast of Little Rock Wash, one in the northeast corner of the Initial Study Area, and a somewhat snake-like string of connected intact parcels in the northeast portion of the Initial Study Area. Desert saltbush scrub occupies approximately 30 percent of the Initial Study Area. Desert saltbush scrub is considered a threatened community by the CNDDB with a state ranking of S3.2.[10]

Creosote Bush Scrub

As described by Holland (1986), Mojave creosote bush scrub is an open community dominated by the shrub species creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with much bare ground between. Soils are generally better draining and less saline than those supporting saltbush scrub, have a low water holding capacity, and occur on slopes, fans, and valleys.

As observed during the field survey, most of this community type in the Initial Study Area appears to conform to the creosote bush series classification per Sawyer and Keeler-Wolf (1995), with creosote bush usually as the sole dominant. Most of the species observed in saltbush scrub were also noted to varying extents in creosote bush scrub, with the addition of white bursage. The boundary between saltbush scrub and creosote bush scrub was observed to be diffuse, with creosote bush density slowly dropping off to an inverse increase in saltbush density.

Where not cleared for agriculture, creosote bush scrub principally occurs in a mosaic pattern with saltbush scrub over a broad area in the eastern portion of the Initial Study Area. As mentioned above, the overall orientation of this mosaic broadly follows the perimeter of the bases of the buttes found beyond the Initial Study Area eastern boundary. The soils in this area are most likely well-drained soils derived from eroded sediment of the adjacent buttes. Mojave creosote bush scrub occupies approximately 26 percent of the Initial Study Area. Mojave creosote bush scrub is given a state ranking of S4 by the CNDDB.

Mojave Wash Scrub

This dry wash scrub community is composed of widely spaced shrubs, with scattered to locally dense tree canopy cover, on usually otherwise barren sandy soils at the bottoms of wide canyons along incised arroyos of upper bajadas and along braided washes of lower bajadas (Holland, 1986). The parallel Sawyer and Keeler-Wolf (1995) series is the catclaw acacia series. Characteristic species include catclaw acacia (*Acacia greggi*), allscale, desert willow (*Chilopsis linearis*), brittlebush (*encelia faranosa*), cheesebush (*Hymenoclea salsola*), creosote bush, and boxthorn.

[10] *Sensitivity Ranking is part of a system devised by DFG to provide information on the rarity of a species or community. S3= 21-100 viable element occurrences or 10,000 to 50,000 acres. S3.2 signifies that the entity is threatened.*

No tree cover was observed except for a few salt cedar (*Tamarix* sp.) individuals. The usual aspect was of widely scattered shrubs, including allscale and cheesebush, with mostly barren sandy soil between. The greatest proportion of this community type found in the Initial Study Area occurs along the southwestern boundary, where Little Rock Wash crosses LAWA property. Wash scrub is also found in the southeastern corner of the Initial Study Area that contains braids of Big Rock Wash and again in a few smaller washes in the northeast portion of the Initial Study Area. Mojave wash scrub habitat could potentially extend into the Initial Study Area in areas adjacent to the washes. Also, it is likely that a few smaller washes that were not encountered or mapped in Figure 12-1 contain similar vegetation. As mapped, Mojave wash scrub occurs in approximately two percent of the Initial Study Area. Mojave wash scrub is considered a threatened community by the CNDDB with a state ranking of S3.2.

Joshua Tree Woodland

Joshua tree woodland (Holland, 1986) or Joshua tree series (Sawyer and Keeler-Wolf, 1995), is an open woodland with Joshua trees (*Yucca brevifolia*) often as the only tree species with scrub vegetation usually occupying the remaining area, although the understory can range to grassland or other vegetation types. This community usually occurs on well-drained, gentle alluvial slopes with sandy, loamy, or gravelly soils.

It is likely that much of the Initial Study Area supported Joshua tree woodland, or at least varying densities of Joshua trees, prior to conversion to agriculture or other uses. Presently, Joshua trees occur over approximately 35 percent of the Initial Study Area, with populations reaching a moderate density in about 1/3 of this area. The areas where the trees occur are generally in habitats otherwise classifiable as moderate to high quality saltbush scrub or creosote bush scrub, although some Joshua trees are present in the above-described habitat types. Due to the characteristics of this plant community type, and because quality and type of associated scrub habitat is a factor in the potential for special-status species occurrence, Figure 12-1 portrays the Initial Study Area in terms of the above-described community types, with Joshua tree presence and relative density shown within the context of the other communities. Areas mapped with a moderate density of Joshua trees are considered to be Joshua tree woodland.

Presence of Joshua trees, especially in moderate density, are generally associated with higher habitat quality in the areas where they are found (less disturbed soils, greater retention of micro topographic features, etc.). Parcels with a moderate density of Joshua trees, and associated moderate to high quality scrub habitat, can be found throughout the Initial Study Area. However, concentrations of such parcels are found in the southeast and central portions of the Initial Study Area in addition to an area in the western portion. The quality of the associated scrub community in these areas generally was observed to be relatively high. Joshua tree woodland is considered a threatened community by the CNDDB with a state ranking of S3.2.

Wildlife Within the Initial Study Area

Agricultural Areas

Agricultural areas within the Initial Study Area may provide occasional habitat for transient mammals, reptiles, and amphibians, and have some value to birds. Small mammals, such as rabbits and rodents, forage on the leaves and grasses and, in turn, may attract small predators, such as hawks or feral cats. Row crops with leveled fields, as are predominant in the Initial Study Area, are used as travel corridors but support no resident wildlife with the exception of the untilled field edges. Burrowing owls (*Athene cunicularia),* a California Species of Special Concern, may inhabit the burrows of California ground squirrels (*Spermophilus beecheyi)* or other small mammals along the edges of agricultural fields in the Initial Study Area. Small mammals and some birds also may utilize fallow agricultural areas and areas previously cleared that

currently exhibit initial shrub re-establishment for limited cover and foraging purposes.

Developed Areas

Developed areas tend to be landscaped with non-native ornamental plant species, thus displacing native plants. Residential parks and disturbed areas provide little habitat for wildlife except for those species adapted to human habitation, such as the European starling (*Sturnus vulgaris*), common raven (*Corvus corax)*, rock dove (*Columba livia*), and house mouse (*Mus musculus)*. Large ornamental trees may provide roosting and nesting opportunities for raptors such as the red-tailed hawk (*Buteo jamaicensis).*

Saltbush Scrub / Creosote Bush Scrub

Desert scrub communities in the Initial Study Area, including saltbush scrub and creosote bush scrub, support a diverse assemblage of reptiles, birds, and mammals. Snake species that are expected to reside in the Initial Study Area include the glossy snake (*Arizona elegans*), long-nosed snake (*Rhinocheilus lecontei)*, gopher snake (*Pituophis melanoleucus)*, and common kingsnake (*Lampropeltis getula*). Lizards such as the western whiptail (*Cnemidophorus tigris*), side-blotched lizard (*Uta stansburiana)*, and long-nosed leopard lizard (*Gambelia wislizenii)* may be found in these scrub habitats in the Initial Study Area as well.

Birds known to occur in or forage over upland scrub habitats in the Initial Study Area include the California horned lark (*Eremophila alpestris*), sage sparrow (*Amphispiza belli*), western kingbird (*Tyrannus verticalis*), common raven, northern harrier (*Circus cyaneus)*, and red-tailed hawk. Other potential resident bird species include the greater roadrunner (*Geococcyx californianus*), California towhee (*Pipilo crissalis*), loggerhead shrike (*Lanius ludovicianus*), Brewer's sparrow (*Spizella breweri*), western meadowlark (*Sturnella neglecta*), cactus wren (*Campylorhynchus brunneicapillus*), California quail (*Callipepla californica*), and great horned owl (*Bubo virginianus*).

Common mammalian species likely inhabiting scrub communities in the Initial Study Area include the deer mouse (*Peromyscus maniculatus*), desert pocket mouse (*Chaetodipus penicillatus*), cactus mouse (*P. eremicus*), desert woodrat (*Neotoma lepida*), Merriam's kangaroo rat (*Dipodomys merriami)*, desert cottontail (*Sylvilagus audubonii*), desert kit fox (*Vulpes macrotis*), and coyote (*Canis latrans*). In addition, desert scrub communities provide foraging habitat for several species of bats known to occur in the project region such as the California myotis (*Myotis californicus)*, pallid bat (*Antrozous pallidus)*, and greater western mastiff bat (*Eumops perotis californicus)*. Crevices in trees, abandoned buildings and other structures may provide roosts for these species. Migratory bat species, such as the Mexican free-tailed bats (*Tadarida brasiliensis)* and hoary bats (*Lasiurus cinereus)* also may utilize these habitats during spring and fall migration through the Initial Study Area.

The occurrence of amphibian species in the Initial Study Area is primarily limited to seasonally ponding washes (i.e., Little Rock Wash, Big Rock Wash). These areas are considered to provide short-term habitat, but not breeding habitat, for local amphibians such as the ubiquitous western toad (*Bufo boreas*) and Pacific chorus frog (*Hyla regilla*). The distribution of these species within the Initial Study Area is limited due to the distance from breeding sites and lack of suitable cover in these areas. As a result, upland portions of the Initial Study Area are considered to provide minimal habitat for amphibian species.

Joshua Tree Woodland

The shrub layer composition in Joshua tree woodlands is similar to that of saltbush scrub described above. Thus, the shrub understory within Joshua tree woodlands provides similar wildlife habitat value to reptiles, small mammals, and many species of birds. The addition of Joshua trees provides nest sites, song perches, and lookout posts for birds such as the cactus wren and Scott's oriole (*Icterus parisorum*), and cover for lizards such as the desert night lizard (*Xantusia*

vigilis vigilis) and desert spiny lizard (*Sceloporus magister*). These lizards also utilize downed Joshua tree branches and other debris for shelter. Joshua trees also may increase wildlife habitat value by providing resources for listed species (i.e., fruits for the MGS (*Spermophilus mohavensis*) forage[11] and nest sites for Swainson's hawk (*Buteo swainsonii)*[12]).

Special Status Species

Several species known to occur in the project vicinity have been accorded "special status" because of their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some of these receive specific protection defined in federal or state endangered species legislation. Others have been designated as "sensitive" based on adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. In addition, Section 15380(b) of the CEQA Guidelines provides a definition of rare, endangered, or threatened species that are not included in any listing.[13] These species are referred to collectively as "special status species" in this document, following a convention that has developed in practice but has no official sanction. The various categories encompassed by the term, and the legal status of each, are discussed later in this chapter. For purposes of this EIR, special-status species include:

- Plant and animal species designated as rare, threatened, or endangered under the federal or state Endangered Species Acts;
- Species that are candidates for listing under either federal or state law;
- Species designated by the USFWS as species of concern or by DFG as species of special concern;
- Species protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-711);
- Bald and golden eagles protected by the federal Bald Eagle Protection Act (16 U.S.C. 668); and
- Species such as candidate species that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines.

The following sections describe the special species plant and wildlife species known to occur or potentially occur within the Initial Study Area.

Plants

There are 14 special status plant species recorded from the vicinity of the Initial Study Area. These species are listed in Table 12-1. None of the species have been recorded within the Initial Study Area. None of the special status plant species expected to occur in the general project region are state or federally listed, but nine have CNPS designations as List 1B or List 2, and would be considered as sensitive (see CEQA Guidelines Section 15380).[14] Additionally, plants listed on CNPS List 1B and List 2 are considered sensitive under the Native Plant Protection Act and Cal-ESA. The CNPS List 1B and List 2 species potentially within the Initial Study Area are listed in Table 12-1.

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[11] *Leitner, 2002.*

[12] *CNDDB, 2004.*

[13] *For example, vascular plants listed as rare or endangered or as List 1 or 2 by the CNPS are considered to meet Section 15380(b).*

[14] *One List 3 species, Parry's spineflower (Chorizanthe parryi var. parryi), has a limited distribution in western Riverside and San Bernadino Counties and may be extirpated from Los Angeles County. CNPS is currently considering moving the species to List 1B.*

Table 12-1
Special Status Plant Species Observed or Potentially Present in the Initial Study Area

PLANT SPECIES COMMON NAME (*SCIENTIFIC NAME*)	**SITE OCCURRENCE**	**SURVEY / IDENTIFICATION PERIOD**	**STATUS USFWS/DFG/ CNPS**
Lancaster milkvetch *Astragalus preussii* var. *laxiflorus*	Numerous records north of Initial Study Area in Edwards Air Force Base (EAFB), one historical record in vicinity of Lancaster (DFG, 2004)	April – May	--/--/List 1B
Alkali mariposa lily *Calochortus striatus*	Numerous records north of Initial Study Area in EAFB; 1988 record from vacant lot near 10th St E and Ave I, east of Initial Study Area (DFG, 2004), 2003 record surrounding LWRP (District No. 14)	April – June	--/--/List 1B
Pygmy poppy *Canbya candida*	Observed in 1995 at EAFB (Tetra Tech, 1995c)	April – May	--/--/List 4
Parry's spineflower *Chorizanthe parryi var. parryi*	Observed in 1896 in general vicinity of Lancaster (DFG, 2004)	April – June	--/--/List 3
Mojave spineflower *Chorizanthe spinosa*	Observed in 1995 at EAFB near Rosamond Dry Lake (Tetratech, 1995a)	April – July	--/--/List 4
Desert cymopterus *Cymopterus deserticola*	Numerous records north of Initial Study Area in EAFB (DFG, 2004)	March – May	--/--/List 1B
Barstow wooly sunflower *Eriophyllum mohavense*	Observed in 1995 at EAFB (Tetra Tech, 1995d)	April – May	--/--/List 1B
Red Rock poppy *Escholzia minutiflora ssp. twisselmannii*	Observed in 1977 in vicinity of northern EAFB (DFG, 2004)	March – May	--/--/List 1B
Golden goodmania *Goodmania luteola*	Observed in 1995 at EAFB near Rosamond Dry Lake (Tetra Tech, 1995a)	April – August	--/--/List 4
Sagebrush loeflingia *Loeflingia squarrosa var. artemisiarum*	Recorded from edges of Buckhorn and Rogers Lakes, north of Initial Study Area (DFG, 2004)	April – May	--/--/List 2
Crowned onion *Muilla coronata*	Observed 1977 at EAFB (CalFlora, 2001)	March – April	--/--/List 4
Short-joint beavertail *Opuntia basilaris var. artemisiarum*	Observed southwest of Palmdale in 1989 (DFG, 2004)	April – June	--/--List 1B
Parish's alkali grass *Puccinellia parishii*	Observed 1992 at EAFB (DFG, 2004)	April – May	--/--List 1B
Parish's popcorn-flower *Plagiobothrys parishii*	Historic record in vicinity of Lovejoy Buttes, believed to be extirpated from the County (DFG, 2004)	March – November	--/--List 1B

Status Codes:
CNPS
List 1A = plants presumed extinct in California
List 1B = plants rare, threatened, or endangered in California
List 2 = plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = plants about which more information is needed
List 4 = plants of limited distribution

Most of the special status plant species could not be identified in the field at the time of the biological reconnaissance surveys as it was not the appropriate season. Thus, this assessment is based on CNDDB and CNPS Electronic Inventory records, and results of plant distribution surveys conducted at EAFB, the southern edge of which is approximately four miles north of the Initial Study Area.

Based on the field reconnaissance and review of the above sources, most of these plant species have a low to moderate potential to occur in the Initial Study Area. Many of the species noted have been recorded from EAFB and are associated with the margins of large dry lake areas which provide conditions different from those found in the Initial Study Area. However, the density of observations in the EAFB area may also be a consequence of the relatively intensive levels of botanical surveys conducted, and the lack of records in the Initial Study Area may similarly be an artifact of insufficient botanical survey coverage.

The Initial Study Area probably does not provide habitat for one of the species, Parry's spineflower (*Chorizanthe parryi* var. *parryi*)[15]. This species, in addition to Parish's popcorn-flower (*Plagiobothrys parishii*), are only historically known from the region and are considered extirpated from the County, thus they are unlikely to occur in the Initial Study Area. The remaining 12 species have been recorded from habitats that exist in the Initial Study Area and have extant populations in the region. These species should be considered to have a moderate potential to occur in habitats found in the Initial Study Area. Collectively, the plants have potential to occur in the saltbush, creosote, wash scrub, and Joshua tree woodland habitats found in the Initial Study Area.

Wildlife

Table 12-2 lists special-status wildlife species potentially occurring within the Initial Study Area. A discussion of each species and the availability of suitable habitat in the Initial Study Area is included in Appendix N of this document. Special status wildlife species potentially occurring in or around the Initial Study Area include the MGS (*Spermophilus mohavensis*), the desert tortoise (*Gopherus agassizi*), resident birds such as the loggerhead shrike (*Lanius ludovicianus*), nesting raptors such as the red-tailed hawk (*Buteo jamaicensis*), burrowing owl (*Athene cunicularia)*, and Swainson's hawk (*Buteo swainsoni*), wintering birds such as the mountain plover (*Charadrius montanus*), reptiles such as the silvery legless lizard (*Anniella pulchra*) and Mojave fringe-toed lizard (*Uma scoparia)*, and special-status bats.

Critical Habitat for Desert Tortoise

The USFWS designated critical habitat for the desert tortoise on February 8, 1994.[16] The Initial Study Area is located approximately 6.5 miles west of the Fremont-Kramer Critical Habitat Unit which includes portions of Kern, Los Angeles, and San Bernardino Counties along Highway 395. The USFWS Desert Tortoise Recovery Plan identifies this area as the Fremont-Kramer Desert Wildlife Management Unit, an area essential to the survival and recovery of the desert tortoise.[17]

Conclusions Regarding the Presence of Special-Status Animals

The following conclusions were reached by the surveying biologists regarding the presence or absence of the 27 special status wildlife species potentially found within the Initial Study Area:

[15] *Ibid.*

[16] *USFWS, 1994a.*

[17] *Ibid, 1994b.*

Table 12-2
Special Status Wildlife Species Potentially Occurring Within the Initial Study Area

SPECIES NAME COMMON NAME (*SCIENTIFIC NAME*)	**POTENTIAL FOR OCCURRENCE**	**STATUS USFWS/ DFG**
Threatened and Endangered Species		
Reptiles		
Desert tortoise *Gopherus agassizii*	Saltbush scrub, creosote bush scrub, and Joshua tree woodland habitat in the Initial Study Area provide potential habitat for this species. Fremont-Kramer Critical Habitat unit and management area located 6.5 miles northeast of Initial Study Area (USFWS, 1994a and 1994b).	FT/CT
Birds		
Swainson's hawk *Buteo swainsoni*	Nests in stands of few trees and forages over agricultural fields and grasslands. Observed in the Initial Study Area nesting in a Joshua tree in 1979 and within agricultural fields in 1999 (DFG, 2004).	FT/--
Mountain plover *Charadrius montanus*	Winters in short grasslands, plowed fields, and newly sprouting grain fields. Observed less than two miles from the Initial Study Area in a mowed alfalfa field (DFG, 2004).	FPT/CSC
Peregrine falcon *Falco peregrinus*	Nesting habitat includes high, protected cliffs and ledges near water. Identified sporadically more than eight miles northwest of Initial Study Area at Piute Ponds during migration periods (EAFB, 1989).	--/CE
Bald eagle *Haliaeetus leucocephalus*	Nesting habitat includes large trees usually near permanent water source. Identified sporadically more than eight miles northwest of Initial Study Area at Piute Ponds during migration periods (EAFB, 1989).	FT/CE
Mammals		
Mohave ground squirrel *Spermophilus mohavensis*	Identified in the central portion of the Initial Study Area between 1973 and 1977 and in the northeastern portion of this area in 1987 (DFG, 2004). Saltbush scrub, creosote bush scrub, and Joshua tree woodland provide potential habitat for this species.	FSC/CT
Species of Special Concern		
Reptiles		
Silvery legless lizard *Anniella pulchra pulchra*	Found in sparse vegetation in dunes, streamside areas, and occasionally desert scrub. Potential habitat occurs along washes in the Initial Study Area.	FSC/CSC
Mojave fringe-toed lizard *Uma scoparia*	An obligate sand-dweller found in dunes and sand fields; Potential habitat occurs along washes in the Initial Study Area.	--/CSC
San Diego horned lizard *Phrynosoma coronatum blainvillei*	Nearest occurrence with unknown date is documented 6.5 miles southwest of the Initial Study Area (DFG, 2004). Low potential for occurrence within saltbush scrub, creosote bush scrub and Joshua tree woodland within the Initial Study Area.	FSC/CSC
Birds		
Golden eagle *Aquila chrysaetos*	Nests on cliffs in rugged mountain ranges. May nest on buttes east of Initial Study Area and forage in Initial Study Area.	--/CSC
Short-eared owl *Asio flammeus*	Winters in open marshes, agricultural fields, and deserts; potential winter foraging habitat in Initial Study Area.	--/CSC

Table 12-2 (cont.)
Special Status Wildlife Species Potentially Occurring Within the Initial Study Area

SPECIES NAME COMMON NAME (*SCIENTIFIC NAME*)	**POTENTIAL FOR OCCURRENCE**	**STATUS USFWS/ DFG**
Burrowing owl *Athene cunicularia*	Known to occur in the project region in open grasslands and shrublands and edges of agricultural fields, various habitats in the Initial Study Area provide potential habitat.	--/CSC
Ferruginous hawk *Buteo regalis*	Inhabits arid, open country; may forage over Initial Study Area in winter.	FSC/CSC
Northern harrier *Circus cyaneus*	Nests on the ground in shrublands and near freshwater marshes. Observed foraging over saltbush scrub in the Initial Study Area (ESA, 2005).	--/CSC
White-tailed kite *Elanus leucurus*	Nests in trees with dense canopy cover and forages in open grasslands, meadows, farmlands and emergent wetlands; may forage in the Initial Study Area.	FSC/Fully Protected
California horned lark *Eremophila alpestris actia*	Occurs in open desert habitats, potential habitat present in Initial Study Area.	--/CSC
Merlin *Falco columbarius*	Inhabits open country; may occur in Initial Study Area as winter resident.	FSC/--
Prairie falcon *Falco mexicanus*	Nests on cliffs in rugged mountain ranges. May nest on buttes east of Initial Study Area and forage in Initial Study Area.	--/CSC
Loggerhead shrike *Lanius ludovicianus*	Identified in saltbush scrub within the Initial Study Area; may occur in scrub habitats and Joshua tree woodland in the Initial Study Area.	--/CSC
Le Conte's thrasher *Toxostoma lecontei*	Found in creosote bush scrub with cholla cactus, Joshua trees, and thorny shrubs. Potential habitat located in saltbush scrub, creosote bush scrub, and Joshua tree woodland in the Initial Study Area.	FSC/CSC
Mammals		
Pallid bat *Antrozous pallidus*	Occurs in grasslands, shrublands, woodlands, and forests, usually in open, dry habitats; may forage and roost in Initial Study Area.	--/CSC
Pale Townsend's big-eared bat *Corynorhinus townsendii pallescens*	Various habitats, often mesic; low potential to roost and forage in Initial Study Area.	FSC/CSC
Spotted bat *Euderma maculatum*	Occurs in arid desert and grassland habitats and roosts in rock crevices; may forage over Initial Study Area and roost in rock crevices to the east.	FSC/CSC
Greater western mastiff bat *Eumops perotis californicus*	Breeds in rugged, rocky canyons and forages in a variety of habitats; may forage and roost in Initial Study Area.	FSC/CSC
Cave myotis *Myotis velifer*	Roosts in caves, mines and structures in desert scrub habitats; may forage and roost in Initial Study Area.	FSC/CSC
Yuma myotis *Myotis yumanensis*	Open forests and woodlands below 8,000 feet in close association with water bodies; may forage over Initial Study Area.	FSC/--
American badger *Taxidea taxus*	Known to occur at Edwards Air Force Base (EAFB, 1993b); may occur in Initial Study Area.	--/CSC

Status Codes:

FT = Federal Threatened
FPT = Federal Proposed Threatened
FSC = Federal Species of Concern
"--" = No status
CE = California Endangered
CT = State Threatened
CSC = California Species of Special Concern
Fully Protected = State Fully Protected Species

Special Status Species Potentially Within the Initial Study Area

The Initial Study Area is located approximately 6.5 miles west of the Fremont-Kramer unit of USFWS-designated Critical Habitat for desert tortoise[18] and the Fremont-Kramer Desert Wildlife Management Unit included in the Desert Tortoise Recovery Plan.[19] Current data on desert tortoise distribution indicate desert tortoise occurring less than two miles to the northeast of the Initial Study Area.[20] Saltbush scrub, creosote bush scrub, and Joshua tree woodland habitat in the Initial Study Area provide potential habitat for this species.

- Swainson's hawks were observed in the Initial Study Area nesting in a Joshua tree in 1979 and within agricultural fields in 1999.[21] Agricultural fields and adjacent stands of trees as well as Joshua tree woodland provide suitable nesting and foraging habitat for this species.

- Mountain plovers were observed west of the Initial Study Area in an agricultural field. Agricultural fields in the Initial Study Area may provide foraging habitat for this species in the winter.

- The peregrine falcon and bald eagle are potential visitors to the Initial Study Area. Use of this area by these species is considered incidental to foraging.

- MGS occurrences were recorded in the central portion of the Initial Study Area between 1973 and 1977 and in the northeastern portion of the Initial Study Area in 1987.[22] Saltbush scrub, creosote bush scrub, and Joshua tree woodland in the assessment may support this species. Trapping efforts conducted in 2003 and 2004 within the EMS area west of Little Rock Wash found no MGS.

- The golden eagle is a wide-ranging species that may nest on buttes east of the Initial Study Area and forage on the site during both the breeding and non-breeding seasons. Buttes east of the Initial Study Area also may support nesting prairie falcons, which have potential to forage over the Initial Study Area.

- The short-eared owl, ferruginous hawk, and merlin are winter migrants through the Mojave Desert and may forage in the Initial Study Area in the winter.

- Burrowing owls may inhabit small mammal burrows along edges of agricultural fields and in saltbush scrub, creosote bush scrub, and Joshua tree woodland areas in the Initial Study Area. These areas provide potential nesting and foraging habitat.

- The northern harrier has been observed foraging over saltbush scrub in the Initial Study Area. Various habitats in the Initial Study Area may support foraging and nesting individuals of this species.

- White-tailed kites are potential foragers in the dry land portions of the Initial Study Area. This species is not likely to nest in the area, with the exception of cottonwoods and other trees along agricultural fields that may provide marginal nesting habitat.

- The desert scrub habitat that occurs in the proposed storage reservoir area is considered to meet the nesting and foraging habitat requirements for the loggerhead shrike, Le Conte's thrasher, and California horned lark. The loggerhead shrike was observed in the Initial Study Area during the reconnaissance survey.

- Six species of special-status bats including the pallid bat, pale Townsend's big-eared bat, spotted bat, greater western mastiff bat, cave myotis, and

[18] *Ibid,1994a.*
[19] *Ibid, 1994b.*
[20] *BLM, 2003.*
[21] *CNDDB, 2004.*
[22] *Ibid.*

Yuma myotis may utilize habitats in the Initial Study Area. Saltbush scrub and creosote bush scrub habitats, irrigated agricultural fields, and water treatment ponds may provide foraging habitat for these species. In addition, bats may roost in crevices in rocky areas east of the Initial Study Area as well as structures and crevices in trees within the Initial Study Area.

- The American badger may be present throughout the Initial Study Area.

Special Status Species Not Likely to be Found Within the Initial Study Area

- San Diego horned lizards are considered absent from the Initial Study Area, based on the unsuitability of the habitat and known distribution of this species.

- Silvery legless lizards and Mojave fringe-toed lizards are assumed absent from the majority of the Initial Study Area due to a lack of suitable habitat. However, limited potential habitat for these species occurs along sandy washes located within the Initial Study Area.

Wetlands *Waters of the United States* and *Waters of the State* Within the Initial Study Area

Wetlands comprise a diverse group of seasonal and permanent aquatic habitats that support diverse plants and animals. Wetlands are analyzed separately both for their biological importance, and for state and federal policies that distinguish wetlands from other plant communities.

A comprehensive wetland assessment for the Initial Study Area has not been completed. However, reconnaissance level biological surveys identified several desert washes in this area, including Little Rock Wash and Big Rock Wash and their smaller branches shown in Figure 12-1.

REGULATORY BACKGROUND

Wetlands Regulations

Federal Agency Regulations

Wetlands and other waters, e.g., rivers, streams and natural ponds, are a subset of *waters of the U.S.* and receive protection under Section 404 of the CWA. The regulations and policies of various federal agencies (e.g., Corps, U.S. Department of Agriculture, and Natural Resource Conservation Service [NRCS], EPA) mandate that the filling of wetlands be avoided to the extent possible. The Corps has primary federal responsibility for administering regulations that concern *waters of the U.S.* and acts under the CWA (Section 404), which governs specified activities in *waters of the U.S.*, including wetlands. EPA has the ultimate authority for designating dredge and fill material disposal sites and can veto the Corps' issuance of a permit to fill jurisdictional *waters of the U.S.*

The Corps has recently indicated that the isolated washes within the Antelope Valley watershed are not considered navigable *waters of the U.S.* as defined in the CWA and therefore are not within their jurisdiction to regulate under Section 404 of the CWA.

State Agency Regulations

The state's authority in regulating activities in wetlands and waters at the site resides primarily with DFG and the SWRCB. The SWRCB regulates *waters of the state* under the PCA. Under Section 401 of the CWA, the SWRCB has review authority of Section 404 permits. The SWRCB has a policy of no net loss of wetlands in effect and typically requires mitigation for all impacts to wetlands before it will issue a water quality certification. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to *waters of the state*, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the PCA.

Under Sections 1600 - 1616 of the California Fish and Game Code, DFG regulates activities that would substantially divert, obstruct or substantially change the natural flow of rivers, streams, and lakes. The jurisdictional limits of the DFG are defined in Section 1602 of the California Fish and Game Code as "bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake…." The DFG requires an SAA for activities within its jurisdictional area. Impacts to the jurisdictional area of the DFG would be considered "significant" in this PWRP 2025 Plan and EIR.

A comprehensive delineation of wetlands within the Initial Study Area has not been completed. However, portions of the Initial Study Area subject to the jurisdiction of the aforementioned agencies may include all or portions of Little Rock Wash and Big Rock Wash.

Special Status Species Regulations

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not yet been listed by either the USFWS or DFG. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. Natural communities listed by CNDDB as sensitive are considered by DFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Other Statutes, Codes, and Policies Affording Limited Species Protection

The federal MBTA[23] prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the Fish and Game Code, Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by DFG. Any loss of fertile eggs, nesting raptors or any activities resulting in nest abandonment would constitute a significant impact. This approach would apply to red-tailed hawks, American kestrels, barn owls, and other birds of prey. Project impacts to these species would not be considered significant in this EIR unless they are known or have a high potential to nest on the site or rely on it for primary foraging.

[23] *16 United States Code, Sec. 703, Supp. I, 1989.*

The federal Bald Eagle Protection Act prohibits persons within the U.S. (or other places subject to U.S. jurisdiction) from "possessing, selling, purchasing, offering to sell, transporting, exporting, or importing any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof."

Vascular plants listed as rare or endangered by the CNPS,[24] but which have no designated status or protection under federal or state endangered species legislation, are defined as follows:

List 1A: Plants believed extinct;

List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere;

List 2: Plants Rare, Threatened, or Endangered in California, but More Numerous Elsewhere;

List 3: Plants about which we need more information – a review list; and

List 4: Plants of limited distribution – a watch list.

In general, plants appearing on CNPS List 1 or 2 are considered to meet CEQA's Section 15380 criteria and effects to these species are considered "significant."

The West Mojave Plan

The West Mojave Plan (WMP) was jointly prepared by agencies having administrative responsibility or regulatory authority over species of concern within the planning area. This document sets forth a regional strategy for conserving plant and animal species and their habitats and defines an efficient, equitable, and cost-effective process for complying with threatened and endangered species laws. The plan will enable the USFWS and DFG to issue programmatic biological opinions. The plan area extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to the Mojave National Preserve on the east. The assessment site is located in Antelope Valley and will, therefore, be subject to the guidelines of the WMP when it is approved.

The northeastern portion of the Initial Study Area is located within the Alkali Mariposa Lily Conservation Area described in the WMP. In addition, the northeastern portion of this area is located adjacent to a MGS Conservation Area and a Mojave Fringe-toed Lizard Conservation Area. Habitat to the east of the Initial Study Area represents a linkage between Angeles National Forest and Habitat Conservation Areas within and surrounding EAFB.

County Significant Ecological Areas

As part of the *General Plan Conservation/Open Space and Land Use* elements, the County has identified and adopted policies for SEAs. The purpose of establishing an SEA is to maintain biological diversity by establishing natural biological parameters, including species, habitat types, and linkages. The *County General Plan* includes recommended management practices for each SEA. Agricultural uses compatible with the resource values present are acceptable management practices within SEAs (see Chapter 9 for further details). Currently no SEAs are located within the Initial Study Area; however, there are four SEAs adjacent to the eastern boundary of the Initial Study Area: Saddleback Butte State Park (SEA No. 51), Alpine Butte (SEA No. 52), Lovejoy Butte (SEA No. 53), and Piute Butte (SEA No. 54) (Figure 9-2). South of the boundary of the City of Palmdale, Little Rock Wash is designated as SEA No. 49.

The entire Initial Study Area is located within the proposed Antelope Valley SEA under consideration by the County Department of Regional Planning. SEAs are recognized for supporting sensitive or biologically significant habitats and/or plant and wildlife species. The proposed Antelope Valley SEA No. 7 stretches across the south-central portion of the Antelope Valley, extending from Littlerock and Big Rock Washes

[24] *Skinner and Pavlik, 1994.*

downstream to the valley floor and northward, encompassing Rogers, Rosamond, and Buckhorn Dry Lakes.[25] The proposed Initial Study Area would be within the boundaries of SEA No.7 as currently proposed by the County. Figure 9-2 also shows the boundary of the proposed SEA No.7.

Local Tree Ordinances

The California Desert Native Plants Act[26] requires a permit from the County Agricultural Commissioner or Sheriff for removal of Joshua trees and other native tree and cactus species occurring in the deserts of California. This act does not apply to the clearing of land for agricultural purposes or to public agencies.

Joshua trees receive protection from the Palmdale Native Desert Vegetation Ordinance.[27] Chapter 14.04 of the City of Palmdale Municipal Code requires a desert vegetation preservation plan with minimum preservation standards for removal of vegetation at sites with Joshua trees and other species included in the California Desert Native Plants Act. If on site preservation is not feasible, in lieu fees may fulfill this requirement.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

To determine the level of significance of an identified impact, the criteria outlined in the CEQA Guidelines were used. The following is a discussion of the approaches to, and definitions of, significance of impacts to biological resources drawn from several distinct guidelines sections.

CEQA Guidelines Section 15065 directs lead agencies to find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.

CEQA Guidelines Section 15206 further specify that a project shall be deemed to be of statewide, regional, or area-wide significance if it would substantially affect sensitive wildlife habitats including, but not limited to, riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by the Fish and Game Code Section 903.

CEQA Guidelines (Section 15380) provide that a plant or animal species, even if not on one of the official lists, may be treated as "rare or endangered" if, for example, it is likely to become endangered in the foreseeable future.

Additional criteria to assess significant impacts to biological resources due to the proposed project are specified in CEQA Guidelines Section 15382 (Significant Effect on the Environment) "….a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

Appendix G of the CEQA Guidelines (as revised) indicates that a project would have a significant effect on the environment if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status

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[25] *PCR Services Incorporation, Biological Resources Assessment of the Proposed Antelope Valley Significant Ecological Area. Prepared for Los Angeles County Department of Regional Planning, November 2000.*

[26] *California Food and Agricultural Code, Division 23.*

[27] *City of Palmdale Code, Chapter 14.04 Joshua Tree and Native Desert Vegetation.*

species in local or regional plans, policies, or regulations;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Fundamentally conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Fundamentally conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

In addition to the above, DFG and USFWS guidelines consider a project to have a significant impact if it were to cause a change in species composition or result in the measurable degradation of sensitive habitats such as wetlands, oak woodlands, and/or perennial grasslands. Impacts would also be considered significant if proposed activities are subject to Corps permit requirements under Section 404 of the CWA and/or permit requirements under Section 1600 of the California Fish and Game Code.

For the purposes of this PWRP 2025 Plan EIR, three principal components of the guidelines outlined above were considered:

- Magnitude of the impact (e.g., substantial/not substantial);
- Uniqueness of the affected resource (rarity); and
- Susceptibility of the affected resource to perturbation (sensitivity).

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species would be considered significant because the species is rare and is believed to be susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state. Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality. CEQA Guidelines (Appendix G) specify that a project will normally have a significant impact on the environment if it will physically impact communities or species protected by adopted environmental plans and goals of the communities where it is located.

Impact 12-1: The construction of storage reservoirs and a storage tank and the conversion of previously undeveloped areas to agriculture could result in the loss of special status plants.

None of the special status plant species recorded from the vicinity of the Initial Study Area have been recorded to occur within it. However, these species have potential to occur in habitats found within the project area. These species are as follows: Lancaster milkvetch, alkali mariposa lily, desert cymopterus, Barstow wooly sunflower, Red Rock poppy, short-joint beavertail, Parish's popcorn-flower, and Parish's alkali grass (all CNPS List 1B species); sagebrush loeflingia (CNPS List 2); Parry's spineflower (CNPS List 3); and

pygmy poppy, Mojave spineflower, golden goodmania, and crowned onion (CNPS List 4 species).

The significance of potential impacts to these plant species depends in part on their level of rarity or threat, reflected by which CNPS list they occur on, and in part by the size and quality of the population to be impacted. The removal of small numbers of CNPS List 4 species would most likely not affect the overall viability of the species and would not be significant. Although not likely to occur in the Initial Study Area, removal of a significant portion of a population of CNPS List 3 species (Parry's spineflower) would be a significant impact (see "Special Status Species" section above for reasons the species would receive protection under CEQA Guidelines Section 15380). The removal of significant portions of populations of the CNPS List 1B species would be a significant impact. Implementation of Mitigation Measure 12-1 would reduce potential impacts to special status plant species to a less than significant level.

Mitigation Measure

Mitigation Measure 12-1: Prior to construction, District No. 20 shall retain a qualified biologist to conduct rare plant surveys of all areas to be cleared following DFG guidelines. A Rare Plant Survey Report shall be prepared and submitted to DFG prior to clearing the properties. Should no special status plant species be found, no further mitigation is necessary.

Should special status species be found, the Rare Plant Survey Report shall recommend measures to avoid significant impacts to populations of rare plants identified on the properties. If feasible, modifications in project design should be made to avoid these populations (e.g., shifting the location of a planned storage reservoir within the larger proposed storage reservoir area).

If avoidance is unachievable, measures could include providing compensatory conservation lands or transplanting individual specimens. Provision of compensatory lands would be expected to range from a ratio of ½:1 to 1:1 (depending on the status of the affected species, the size of affected population, and the quality of affected habitat) through the identification and conservation of habitat managed through the WMP.

If transplantation is conducted, the areas for relocation should be within a 20-mile radius of the project site. Plants should be relocated to areas with ecological conditions (slope, aspect, microclimate, soil moisture, etc.) as similar to those in which they were found as possible. Due to its unreliability, translocation alone should not be relied upon as a sole means of mitigation. Monitoring and success criteria for transplanted individuals should be specified in the report.

Recommended measures in the Rare Plant Survey Report, in addition to any modifications required by the DFG, must be approved by the DFG. Following approval, the measures must be implemented.

Significance After Mitigation

Less than significant.

Impact 12-2: The construction of storage reservoirs, a storage tank, and the pipeline and the conversion of previously disturbed areas to agriculture could result in discharge or alteration to *waters of the state* regulated by the SWRCB and DFG.

The Corps has indicated that the isolated washes in the Antelope Valley watershed are not considered *waters of the U.S.* as defined in the CWA. Therefore, no *waters of the U.S.* will be impacted by project development. However, the ephemeral washes including Little Rock Wash and Big Rock Wash are considered *waters of the state*, subject to state conservation regulations.

The preliminary reconnaissance of the Initial Study Area identified one area of previously modified desert wash, a potential *waters of the state* within the proposed Agricultural Study Area. Smaller washes, or other

waters of the state, not observed during the reconnaissance survey may occur in areas proposed for development that would be altered or removed by project development. Implementation of mitigation measures 12-2, 12-3, and 12-4 would reduce potential impacts to *waters of the state* to a less than significant level.

Mitigation Measures

Mitigation Measure 12-2: Prior to clearing or alteration of land, a qualified biologist will survey the areas to be developed for the occurrence of *waters of the state*. Should no *waters of the state* be found to occur, no further mitigation is necessary.

Mitigation Measure 12-3: Should *waters of the state* be found, they will be delineated and described in a wetland delineation report by a qualified biologist.

Mitigation Measure 12-4: If *waters of the state* will be affected, a report of waste discharge will be submitted to the RWQCB-LR and a Water Quality Certification will be obtained if deemed necessary by the RWQCB-LR. An SAA will be obtained from DFG if necessary. Conditions specified by these agencies may require off site replacement of lost *waters of the state* at a 1:1 ratio.

Significance After Mitigation

Less than significant.

Impact 12-3: The construction of storage reservoirs, a storage tank, and the pipeline, and the conversion of previously undeveloped saltbush scrub, creosote bush scrub, and Joshua tree woodland in the Initial Study Area for agriculture could result in adverse impacts to nesting special-status bird species, including Swainson's hawk, northern harrier, white-tailed kite, burrowing owl, and other raptors, loggerhead shrike, Le Conte's thrasher, California horned lark, as well as more common migratory birds that are protected by the MBTA.

Both northern harrier and loggerhead shrike were observed during reconnaissance surveys of the Initial Study Area conducted during the non-breeding season. A Swainson's hawk was observed within the proposed Agricultural Study Area No. 5 nesting in a Joshua tree in 1979. Burrowing owls are known to occur in the project region and may inhabit small mammal burrows along edges of agricultural fields and in saltbush scrub, creosote bush scrub and Joshua tree woodland. These species as well as white-tailed kite and other raptors, LeConte's thrasher, California horned lark, and other birds protected by the MBTA have potential to nest within saltbush scrub, creosote bush scrub, Joshua tree woodland, and large trees in agricultural areas where construction of storage reservoirs and conversion to agriculture is proposed. These areas also may provide foraging habitat for migratory and resident birds such as the bald eagle, peregrine falcon, mountain plover, short-eared owl, ferruginous hawk, and merlin.

Impacts to individual nesting special-status birds could occur if these species were nesting on or adjacent to the construction areas at the time of construction. Removal of trees and shrubs that provide nesting habitat could result in the direct mortality of birds. Construction noise, vibrations, and human disturbance could cause nest abandonment, death of the young, or loss of reproductive potential at active nests located near project activities. Implementation of Mitigation Measure 12-5 would reduce potential impacts to special-status nesting birds during the breeding season to a less than significant level.

Mitigation Measure

Mitigation Measure 12-5: If project activities cannot be avoided during the breeding-bird season (generally March 1 through August 31), District No. 20 shall conduct focused preconstruction breeding-bird surveys to include Swainson's hawk, white-tailed kite, loggerhead shrike, Le Conte's thrasher, and California horned lark, as well as other species protected under the MBTA, in all areas that may provide suitable nesting

habitat. For activities that occur outside the breeding-bird season (generally September 1 through February 28) such surveys would not be required.

No more than two weeks before construction, a survey for burrows and burrowing owls would be conducted by a qualified ornithologist. Surveys would be based on the protocol described by the California Burrowing Owl Consortium (1993), which includes up to four surveys on different dates if there are suitable burrows present. Surveys would include areas within 250 feet of the construction area that provide potential burrowing owl nesting habitat (access permitting). Simultaneous with the owl surveys, an assessment of the construction area would also be conducted to determine the nesting status of Swainson's hawk, white-tailed kite, loggerhead shrike, Le Conte's thrasher, California horned lark, as well as other species protected under the MBTA. The survey protocol timing and methodology may include aspects of recent burrowing owl protocol research (i.e., Conway, 2003).

If any of the above species are identified, occupied nests or burrows would not be disturbed during the nesting season (February 1 through August 31 for owls and other raptors; March 1 through August 31 for other species), including a minimum 250-foot buffer zone around any occupied burrow or passerine nest, 150 feet for other non-special status passerine birds, and up to 500 feet for raptors. The size of individual buffers may be modified through coordination with DFG based on site-specific conditions and existing disturbance levels. During the non-nesting season, District No. 20 would encourage owls to relocate from the construction disturbance area to off site habitat areas and undisturbed areas of the project site through the use of one-way doors on burrows. Consistent with California Burrowing Owl Consortium Guidelines, if ground squirrel burrows, stand pipes, and other structures that have been documented during pre-construction surveys as supporting either a nesting burrowing owl pair or resident owl are removed to accommodate the proposed project, these structures and burrows will be relocated or replaced on or adjacent to the project site. Relocated and replacement structures and burrows will be sited within suitable foraging habitat within 1/2 mile of the project area. In addition, removed trees that have been documented during pre-construction surveys as supporting Swainson's hawk nests will be replaced with suitable native nest tree species (i.e., cottonwoods, etc.) within 1/2 mile of the project area and adjacent to suitable foraging habitat. No relocation or habitat replacement measures are required for loggerhead shrike, Le Conte's thrasher, or California horned lark during the non-breeding season.

Significance After Mitigation

Less than significant.

Impact 12-4: The construction of storage reservoirs and a storage tank, and the conversion of previously undeveloped saltbush scrub, creosote bush scrub, and Joshua tree woodland in the Initial Study Area to agriculture could cause loss of MGS habitat and/or possible incidental take of the MGS.

The proposed project area is located on the western fringe of the MGS habitat as identified by DFG.[28] MGS were recorded in proposed Agricultural Study Area No. 5 between 1973 and 1977 and in the northeastern portion of the Initial Study Area in 1987. No MGS were found during two seasons of trapping in 2003 and 2004 at the EMS to the west of Little Rock Wash. Nonetheless, the potential exists for encountering this state-listed threatened species while clearing land in areas proposed for construction of storage reservoirs and conversion to agriculture. Saltbush scrub, creosote bush scrub, and Joshua tree woodland habitats identified on Figure 12-1 as moderate quality with moderate constraints have a low to moderate potential to support MGS. Those areas identified as supporting winterfat and/or increased shrub diversity (shown on Figure 12-1 as higher quality habitat) are more likely to support MGS. Low quality

[28] *DFG, 1993.*

saltbush scrub shown on Figure 12-1 is expected to have a very low potential to support MGS. If MGS are present in areas proposed for development, the project could result in direct significant impacts to this species through mortality of individuals and habitat loss. Implementation of the following mitigation measures would ensure that potential impacts to the state-listed MGS are identified and mitigated.

Mitigation Measures

Mitigation Measure 12-6: District No. 20 shall attempt to utilize agricultural land or previously cleared or graded parcels for placement of storage reservoirs and conversion to agriculture where feasible to minimize grading of potential MGS habitat.

Mitigation Measure 12-7: District No. 20 will conduct absence surveys according to the modified protocol guidelines as approved by DFG for the MGS in all proposed disturbance areas that could provide at least low quality habitat for the species (i.e., low and moderate quality saltbush scrub and low and moderate quality creosote bush scrub areas as shown in Figure 12-1). If no MGS are found during these surveys, no other action would be required to protect the species. However, if MGS are found to be present, Mitigation Measure 12-8 shall apply. At its discretion, District No. 20 may forgo these protocol surveys and proceed with Mitigation Measure 12-8, requiring compensatory lands.

Mitigation Measure 12-8: If no DFG-approved absence surveys are conducted, or if the presence of MGS on any of the undeveloped lands to be cleared by District No. 20 is indicated during the protocol surveys, compensatory lands at a 1/2:1 to 3:1 ratio shall be made in perpetuity for the protection of the MGS, depending on the value of the habitat quality. Compensation would only be required for the conversion of the areas shown on Figure 12-1 that may be potentially suitable MGS habitat such as low and moderate quality saltbush scrub and low and moderate quality creosote bush scrub. The location and conservation management of the identified compensatory lands shall be approved by DFG pursuant to Section 2081 of the California Fish and Game Code.

Significance After Mitigation

Less than significant.

Impact 12-5: The construction of storage reservoirs, a storage tank, and the pipeline and the conversion of previously undeveloped saltbush scrub, creosote bush scrub, and Joshua tree woodland in the Initial Study Area to agriculture could cause loss of desert tortoise habitat and/or possible incidental take of desert tortoise.

Literature surveys and reconnaissance-level field surveys conducted for the Initial Study Area indicate that the desert tortoise has potential to occur within areas proposed for construction of storage reservoirs and conversion to agriculture. Current data on desert tortoise distribution indicates desert tortoise occurring less than two miles to the northeast of the Initial Study Area. The proposed disturbance areas are within the historic range of this threatened species. Since much of the area to be impacted by the proposed project is currently undeveloped, it is possible that desert tortoise could be encountered during construction. Potential significant impacts to desert tortoise would include mortality of individuals and habitat loss. The following mitigation measures would reduce the impact to less than significant levels.

Mitigation Measures

Mitigation Measure 12-9: District No. 20 shall attempt to utilize agricultural, cleared or pre-graded parcels for placement of storage reservoirs and conversion to agriculture where feasible to minimize grading of potential desert tortoise habitat.

Mitigation Measure 12-10: District No. 20 will conduct absence surveys for desert tortoise in all proposed disturbance areas that provide potential habitat (i.e., moderate quality with moderate constraints as shown in Figure 12-1). Surveys shall follow the USFWS protocol[29] or other appropriate site-specific protocol as determined in coordination with USFWS.

Mitigation Measure 12-11: If USFWS-approved surveys do not identify desert tortoise within proposed disturbance areas, the following measures shall be implemented. Prior to working on the project, all site managers and construction employees shall be educated as to the natural history, endangerment factors, and appropriate protocol for dealing with tortoise encountered in and around the construction areas. In addition, if a tortoise is observed during construction, all construction shall be halted in the immediate area. The USFWS and DFG must be immediately notified to determine necessary actions.

Mitigation Measure 12-12: If USFWS-approved surveys identify desert tortoise on any of the undeveloped lands to be cleared by District No. 20, a Desert Tortoise Protection and Mitigation Plan will be developed and adopted in consultation with the USFWS and the DFG. Elements of the plan would include, but not be limited to, the following:

1. Pre-construction desert tortoise surveys and tortoise relocation to an approved off site location by a USFWS- and DFG-authorized biologist(s);

2. Staking of approved disturbance areas in the field and installation of temporary tortoise exclusion fencing around active construction areas;

3. A worker education program including the natural history, endangerment factors, and appropriate protocol for dealing with tortoise encountered in and around the construction areas;

4. Enforcement of speed limits and checking under vehicles for tortoise;

5. Biological monitoring of all ground disturbance; and

6. Measures to prevent increased use of the project site by common ravens through trash management, removal of unnatural sources of standing water, and other means.

In addition, compensatory mitigation for desert tortoise habitat loss at a 1/2:1 to 3:1 ratio, depending on the value of the habitat quality, shall be made available in perpetuity for the protection of the desert tortoise for the conversion of any of the potentially suitable habitat areas shown on Figure 12-1 (i.e., moderate quality with moderate constraints areas). The location and conservation management of the identified compensatory lands shall be approved by USFWS pursuant to Sections 7 and 10a of the FESA and by DFG pursuant to Section 2081 of the California Fish and Game Code.

Significance After Mitigation

Less than significant.

Impact 12-6: The construction of storage reservoirs, a storage tank, and the conversion of previously undeveloped Joshua tree woodland areas in the Initial Study Area to agriculture could result in adverse impacts to special-status bat species.

Special-status bats may utilize structures and trees, snags, exfoliating bark, and crevices within Joshua tree woodland habitat in the Initial Study Area and in surrounding areas for winter roosting or nursery colonies. Removal of trees and structures and other proposed construction activities could result in direct mortality of special-status bats. In addition, construction noise and human disturbance within and adjacent to potential roosting habitat during the breeding season could cause roost abandonment and

[29] USFWS, 1992.

death of young. Implementation of mitigation measure 12-13 would reduce potential impacts to special-status bat species to a less than significant level.

Mitigation Measures

Mitigation Measure 12-13: District No. 20 shall retain a qualified biologist to conduct focused preconstruction surveys for special-status bats within 500 feet of suitable roosting habitat. If no evidence of bats (i.e., direct observation, guano, staining, strong odors) is present, no further mitigation is required. If evidence of bats is observed, the following measures are required to avoid potential adverse effects to special-status bats:

- A 200-foot no-disturbance buffer will be created around active bat roosts during the breeding season (March 1 through August 15). Buffer sizes may be modified in coordination with DFG based on existing noise and disturbance levels and other site-specific conditions. Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the take of individuals will be prohibited.

- Removal of trees and structures showing evidence of bat activity will occur during the period least likely to impact the bats, as determined by a qualified biologist, generally between February 15 and October 15 for winter hibernacula and between August 15 and March 1 for maternity roosts. If exclusion is necessary to prevent indirect impacts to bats from construction noise and human activity adjacent to trees showing evidence of bat activity, these activities shall be conducted during the noted periods as well.

Significance After Mitigation

Less than significant.

Impact 12-7: The construction of storage reservoirs, a storage tank, and the pipeline and the conversion of previously undeveloped areas to agriculture could result in adverse impacts to the silvery legless lizard and Mojave fringe-toed lizard.

Silvery legless lizards occur within dunes, streamside areas, and occasionally desert scrub. The Mojave fringe-toed lizards typically inhabit "blowsand" transported by wind or water. These species are assumed absent from the majority of the Initial Study Area due to a lack of suitable habitat. However, potential habitat for these species occurs within sandy washes located within the Initial Study Area, such as Little Rock Wash, a major source of sand in the proposed disturbance area. A reduction in water-transported sand is not anticipated as a result of the proposed project because the proposed facilities would not be constructed within washes in the Initial Study Area. Because of the project avoidance of major water-borne sand sources and potential habitat for Mojave fringe-toed lizard and silvery legless lizard, no impacts to these species are anticipated.

Mitigation Measure

No mitigation measures are required.

Significance of Impact

Less than significant.

Impact 12-8: The construction of storage reservoirs, a storage tank, and the conversion of previously undeveloped areas to agriculture could result in adverse impacts to the American badger.

American badgers are uncommon but known to occur in the general project region, particularly on EAFB, approximately four miles north of the Initial Study Area. This species inhabits drier open stages of most scrub, forest, and herbaceous habitats, with friable soils for digging burrows. Saltbush scrub, creosote bush scrub, and Joshua tree woodland habitats in the Initial Study Area may support the American badger. Construction activities have the potential to result in the

mortality or injury to individual animals. Local badger populations off of EAFB experience considerable pressure from development in the area. The project would add to this development pressure. Implementation of Mitigation Measure 12-14 would reduce potential impacts to the American badger to a less than significant level.

Mitigation Measure

Mitigation Measure 12-14: District No. 20 shall retain a qualified biologist to conduct focused preconstruction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential adverse effects to the American badger:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.

- If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three- to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

Significance After Mitigation

Less than significant.

Impact 12-9: The construction of storage reservoirs, a storage tank, and the conversion of previously undeveloped areas to agriculture could result in the removal of Joshua trees and other native desert plants protected by local ordinances.

Half of the Agricultural Study Area No. 5 is within the City of Palmdale city limits. Removal of Joshua trees for project development within the City of Palmdale is subject to provisions of the Palmdale Native Desert Vegetation Ordinance (Chapter 14.04 of the City of Palmdale Municipal Code), which prohibits removal of desert vegetation (Joshua and juniper trees) except as provided for by provisions of the chapter. Adherence to, and implementation of, the applicable measures specified in the Palmdale Native Desert Vegetation Ordinance will reduce this impact to a less than significant level.

Mitigation Measures

Mitigation Measure 12-15: District No. 20 shall attempt to place storage reservoirs and agricultural areas in areas exhibiting a low density of Joshua trees.

Mitigation Measure 12-16: Prior to removal of Joshua trees within the boundaries of the City of Palmdale, District No. 20 will obtain and comply with a permit from the City of Palmdale landscape architect or director of public works designee. Conditions and measures anticipated to be in the permit include but are not limited to:

- A desert vegetation preservation plan prepared by a qualified biologist consisting of a written report and site plan depicting the location of each Joshua tree and, if determined necessary by the City of Palmdale, a long-term maintenance program for any Joshua trees left on site.

- Criteria for preservation of desert vegetation, the minimum standard for preservation being two Joshua trees per acre or as determined by the qualified biologist in accordance with the City of Palmdale. Joshua trees to be left on site should be fenced off and left undisturbed during any grading activities or removed to a holding area until grading

activities are completed. If two Joshua trees per acre can not be preserved on site, the trees shall be transplanted to an off site location by District No. 20 as approved by the City of Palmdale. Joshua trees may be transplanted to compensatory lands discussed in Mitigation Measure 12-18. In lieu of transplantation of Joshua trees from areas to be developed, District No. 20 may satisfy the requirements of the city code through payment of a fee to the city. At the city's discretion, compensatory mitigation for Joshua tree woodland included in Mitigation Measure 12-18 may satisfy Mitigation Measure 12-16 if the city determines that these lands support adequate numbers of Joshua trees.

- Joshua trees preserved on site, in landscape easements, or landscape assessment districts are to be maintained in a healthy condition for a minimum of two growing seasons. The trees will be evaluated after one year by a qualified biologist. Trees determined to be failing or that have died will be replaced as determined by the city.

Significance After Mitigation

Less than significant.

Impact 12-10: The construction of storage reservoirs, a storage tank, and the conversion of previously undeveloped areas to agriculture would result in the loss of Joshua tree woodland habitat and reduction of a sensitive natural community and available habitat for common and special-status wildlife species in the project region.

Portions of the Initial Study Area under current or historic agricultural production do not provide high habitat value to plant and wildlife species in the project region. However, moderate quality saltbush scrub, creosote bush scrub, and Joshua tree woodland comprise a large portion of the Initial Study Area and provide habitat for a number of plant and wildlife species with restricted ecological tolerances. As discussed above, the California threatened Swainson's hawk and MGS have been observed within the Initial Study Area (DFG, 2004). In addition, this area may support the federal and California threatened desert tortoise as well as non-listed sensitive species including burrowing owl and other raptors, loggerhead shrike, Le Conte's thrasher, California horned lark, special-status bats, and the American badger. Habitat loss as a result of the proposed project would reduce nesting and foraging habitat available to special-status species as well as contribute to the local reduction in the overall carrying capacity of the project region for a variety of common animals such as Great Basin whiptail, western meadowlark, California horned lark, desert kit fox, white-tailed antelope ground squirrel, and others. Predators such as red-tailed hawks, white-tailed kites, northern harriers, American kestrels, and over-wintering golden eagles would also lose foraging habitat in the Initial Study Area resulting in a potential reduction in the overall variety of species found in the surrounding area.

Joshua tree woodland occupies only three percent of lands within the 9.4 million acre WMP Area.[30] Joshua tree woodland is considered a sensitive natural community and highest-inventory priority by DFG due to its scarcity and decline throughout its range and because of the numerous listed plant and wildlife species that inhabit this community. Based on reconnaissance surveys conducted by ESA of the Initial Study Area, areas proposed for construction of storage reservoirs and conversion to agriculture comprise a large portion of the Joshua tree woodland present in the project vicinity. Therefore, the proposed project would result in a substantial reduction of a sensitive natural community and available habitat for common and special-status wildlife species. Habitat loss as a result of project implementation could contribute to a reduction in the diversity of common and special-status plant and wildlife species in the local project vicinity. Due to the sensitivity and regional decline of the habitat,

[30] *BLM, 2003.*

Joshua tree woodland habitat loss is considered a significant impact of the project. The following mitigation measures would reduce the impact to less than significant levels.

Mitigation Measure

Mitigation Measure 12-17: District No. 20 shall attempt to utilize agricultural, cleared, or pre-graded parcels for placement of storage reservoirs and conversion to agriculture where feasible to minimize grading of Joshua tree woodland and common and special-status wildlife species habitat.

Mitigation Measure 12-18: Compensatory mitigation for loss of moderate density Joshua tree woodland as shown on Figure 12-1 at a 1:1 ratio shall be made in perpetuity for the protection of this sensitive community and associated special-status species habitat. The compensation may include development of or donation to a conservation bank, land trust, or conservation easement.

District No. 20 will develop and implement a Habitat Compensation Management Plan for the compensatory lands and submit the plan to DFG and USFWS. Elements of the plan will include, but not be limited to, the identification of the compensatory lands, the identification of responsible parties and financial assurances for management of compensatory lands in perpetuity, and other project compensation and monitoring activities.

Significance After Mitigation

Less than significant.