5.9 BIOLOGICAL RESOURCES

The information contained within this section is summarized from the *Moreno Valley General Plan EIR Biological Report* (Merkel & Associates, September 2004). The report is provided in Volume II Appendix E of this EIR.

The existing biological resources documented in this report were determined through an extensive review of the most current, available biological literature and Geographical Information Systems (GIS) data available for the planning area. Previous biological surveys conducted by Merkel & Associates (M&A) staff, as well as biological information gathered by other consultants for projects within Moreno Valley, were further reviewed.

Vegetation communities were primarily identified based on the regional GIS data incorporated into the MSHCP (KTU+A and PSBS 1995). Floral and faunal species potential presence was determined based on vegetation community presence/absence and knowledge of species requirements. The assessment of presence or potential presence of sensitive biological resources was also based on MSHCP data, which incorporated California Natural Diversity Database records for sensitive species.

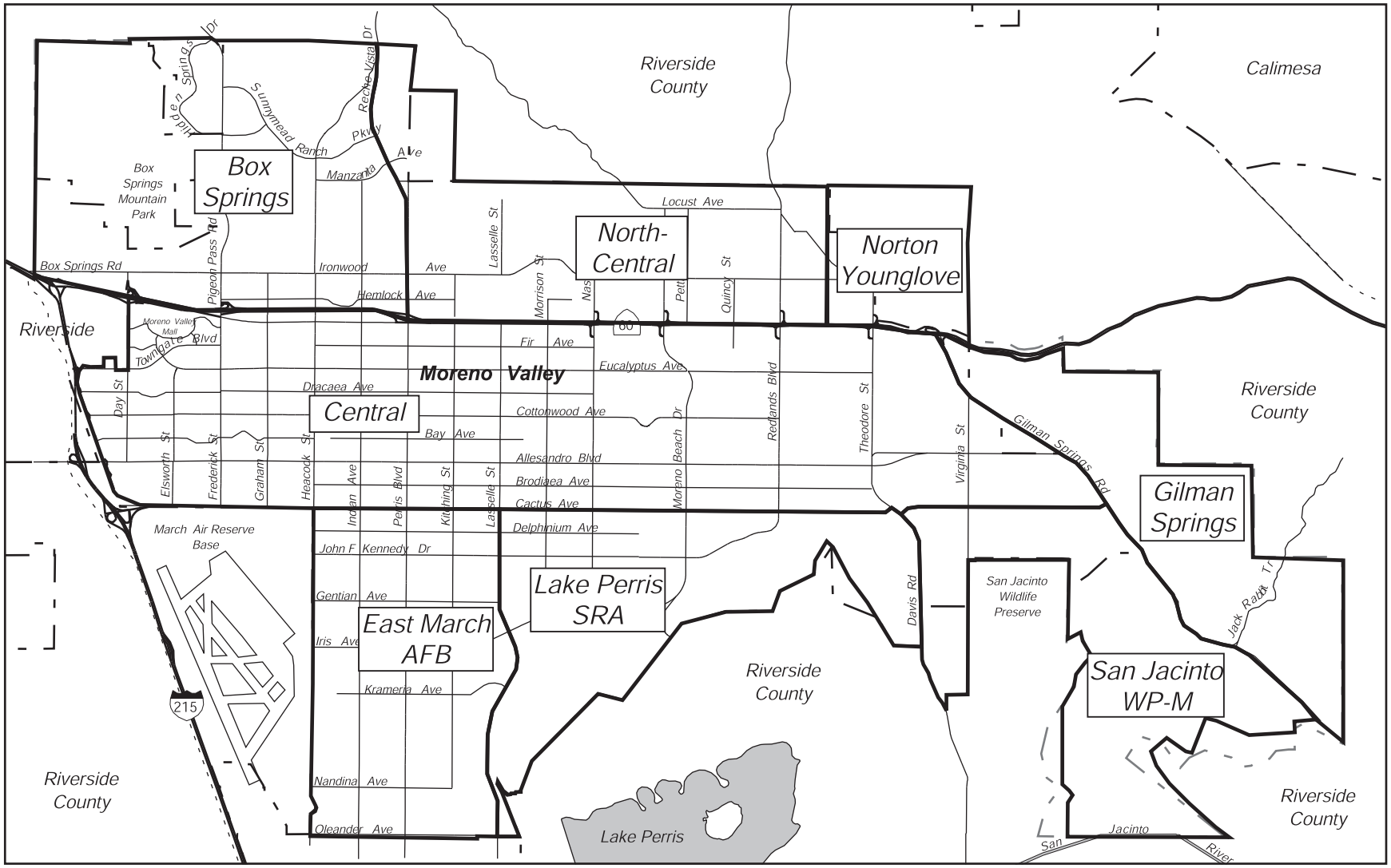
In addition to the MSHCP and vegetation community information, the following sources were consulted to aid in determining faunal presence/absence: USFWS 2000b, Ericksen and Belk 1999, Sauer *et al*. 1996, Sauer *et al*. 2000, Zeiner *et al*. 1988, Zeiner *et al*. 1990a and 1990b. M&A also contacted individuals with special expertise to determine the likelihood of species presence for certain groups (*e.g.*, bats).

Additionally, M&A biologists, Craig Reiser and Diana Jensen, conducted field investigations in April 2001 to ground truth portions of the regional GIS vegetation data and record locations of identified sensitive species.

ENVIRONMENTAL SETTING

Planning Area Geographic Sections

Since the planning area covers such a broad area, the area has been divided into eight sections based on geography and existing land use. The sections include Box Springs Regional Park, North-Central, Norton Younglove, Gilman Springs Road-Badlands, San Jacinto Wildlife Area-Mystic Lake, Lake Perris State Recreation Area (SRA), East March Air Force (Reserve) Base, and Central sections. **Figure 5.9-1** depicts the location of each of the sections. The sections are delineated along parcel lines and each of the sections is designed to contain significant land use and biological features. The eight sections are defined and described below.



Source: Merkel Associates, 2002

City Boundary

Sphere of Influence

North 0 6,000 12,000 ft

Figure 5.9-1
Planning Area Biological Geographic Sections

Box Springs Regional Park Section

This section includes planning area lands north of State Route 60 and west of Perris Boulevard. It is largely occupied by Box Springs Regional Park (designated as open space) in the west and dominated by a mixture of residential, public, vacant and open space land east of Box Springs Regional Park and west of Perris Boulevard.

North-Central Section

The North-Central Section includes the area north of State Route 60, east of Perris Boulevard and west of Sinclair Street. Dominated by vacant land and residential development, this section lies (regionally) between the Box Springs area to the west and the Badlands to the east. County of Riverside lands bound this section on the north. In terms of land use, this section is very similar to the Central Section which borders to the south.

Norton Younglove Section

The Norton Younglove Section lies north of State Route 60 from Sinclair Street east into the Badlands. It is immediately east of the North-Central Section. It is a small section, mapped almost entirely as vacant land and unlike previous sections, it supports a predominance of native vegetation communities.

Gilman Springs Road-Badlands Section

South of State Route 60 and east of Gilman Springs Road lies the Gilman Springs Road-Badlands Section. Similar to the North-Central Section to its northeast, this section is largely mapped as vacant lands, with inclusions of residential lands and open space. This section supports a large area of native vegetation communities associated with the Badlands, which comprise the eastern part of this section and continue eastward outside the planning area.

San Jacinto Wildlife Area -Mystic Lake Section

The San Jacinto Wildlife Area-Mystic Lake Section is situated in the southeastern portion of the planning area, west of Gilman Springs Road, north of the San Jacinto Wildlife Area, and northeast of Lake Perris State Recreational Area. It is bordered to the west by Davis Road and to the north by Cactus Avenue. Existing land uses within this section include vacant and agricultural.

Lake Perris State Recreation Area (SRA) Section

Between Lasselle Street and Davis Road, south of Cactus Avenue, and north of Lake Perris SRA is the Lake Perris SRA Section. This section is characterized by open space

and native vegetation on its southeastern half along the Lake Perris SRA lands and by vacant, public, and residential lands on its northwestern side.

East March Air Force (Reserve) Base (AFB) Section

The East March AFB Section is adjacent to the Lake Perris SRA Section on the west. Its northern boundary is formed by Cactus Avenue and its western and southern boundaries are formed by the planning area boundary. Immediately adjacent to this section (to the west) and outside the project boundary, is the March Air Reserve Base. In terms of existing land uses, this is a diverse section composed of residential, agricultural, public, vacant, open space, and commercial and/or business park parcels.

Central Section

The planning area lands located in the central section of the planning area have been grouped into the Central Section. This broad central area contains nearly equal parts residential parcels and vacant lands with a scattering of other land use designations. On the eastern side, large areas are shown as agriculture on the Riverside County vegetation maps, while the west has a higher percentage of commercial uses. Some Non-native Grasslands appear to have been inaccurately mapped as Cropland on the Riverside County vegetation maps (City of Moreno Valley 2004). To the south, this section is bounded by March Air Reserve Base and Cactus Avenue, to the north by State Route 60, on the east by Gilman Springs Road, and in the west by the project boundary and City of Riverside.

Planning Area Characteristics

The elevation of the planning area ranges from a low of approximately 1,550 feet to a high of 1,800 feet. The planning area gradually slopes to the south and southwest with the higher elevations north of the Pomona Freeway and Moreno Peak and the lower elevations near March Air Reserve Base.

A number of unnamed drainages are located throughout the planning area. In the west, these small watercourses drain into Poorman Reservoir or continue southwest outside of the project area. Drainages from the Badlands feed into the San Jacinto River near the southeastern boundary of the planning area and water from the north drains into the Perris Valley Storm Drain, a tributary of the San Jacinto River in the southwestern portion of Moreno Valley.

The City lies primarily on bedrock geology known as the Perris Block. The planning area's underlying surficial geology is predominantly mapped as Quaternary Alluvium and Mesozoic Granitic Rocks (Rogers 1965).

Multi-Species Habitat Conservation Plan (MSHCP)

The Moreno Valley planning area is located within the Reche Canyon/Badlands Area Plan portion of the MSHCP. The MSHCP serves as a comprehensive, multi-jurisdictional Habitat Conservation Plan, pursuant to Section (a)(1)(B) of the federal Endangered Species Act of 1973, as well as a Natural Communities Conservation Plan (NCCP) under the State NCCP Act of 2001 (Dudek 2003a). The plan "encompasses all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning Beaumont, Calimesa, Perris, Hemet, and San Jacinto." The overall biological goal of the MSHCP is to conserve covered species and their habitats, as well as maintain biological diversity and ecological processes while allowing for future economic growth within a rapidly urbanizing region (Dudek 2003a).

Federal and State wildlife agencies approved permits required to implement the MSHCP on June 22, 2004. Implementation of the plan will conserve approximately 500,000 acres of habitat, including land already in public or quasi-public ownership and about 153,000 acres of land in private ownership that will be purchased or conserved through other means. The money for purchasing private land will come from development mitigation fees as well as state and federal funds.

The MSHCP includes a program for the collection of development mitigation fees, policies for the review of projects in areas where habitat must be conserved and policies for the protection of riparian areas, vernal pools and narrow endemic plants. It also includes a program for performing surveys for "narrow endemic plants", burrowing owls and the Los Angeles pocket mouse.

The intent of the MSHCP is to ensure the survival of a range of plants and animals and avoid the cost and delays of mitigating biological impacts on a project-by-project basis. It would allow the incidental take (removal for development purposes) of currently listed species and their habitat. It would also allow the incidental take of species that might be listed in the future.

Regional Vegetation Communities/Flora

A range of vegetation types are known to occur within the planning area. The County of Riverside prepared the vegetation community map depicted in **Figure 5.9-2**. **Table 5.9-1** lists the vegetation types with approximate acreages. **Table 5.9-1** also addresses the vegetation types within 11 collapsed vegetation categories consistent with the format provided in the MSHCP and are classified according to the Holland Code (HC) classification system (Holland 1986). The reader should note that the County's vegetation map is not 100 percent accurate. For example, non-native woodland was erroneously mapped as oak woodland and some of the land classified as cropland is actually non-native grassland.[1]

[1] Jeff Specter, City of Moreno Valley, March 2005.

TABLE 5.9-1
REGIONAL VEGETATION COMMUNITIES AND APPROXIMATE ACREAGES WITHIN THE PLANNING AREA

Collapsed Vegetation Community Classifications	Uncollapsed Vegetation Community Classifications	Approximate Acreages
Coastal Sage Scrub	Riversidean Sage Scrub	6,808
Riversidean Alluvial Fan Sage Scrub	Disturbed Alluvial	16
	Riversidean Alluvial Fan Sage Scrub	19
Chaparral	Chaparral	2192
Grassland	Non-Native Grasslands	3,231
Playas and Vernal Pools	Alkali Playa	2,027
	San Jacinto Vernal Pools	Not mapped
Riparian Scrub, Woodland, Forest	Riparian Scrub	26
Meadows and Marshes	Marsh	2
Woodland	Non-native Woodland*	13
	Oak Woodland	8
Water	Open Water/Reservoir/Pond	371
Subtotal of Natural/Naturalized Habitats:		**14,713**
Developed, Disturbed Land	Residential/Urban/Exotic	16,767
Agricultural Land	Field Croplands**	10,800
	Groves/Orchards	364
	Dairy/Livestock***	225
Subtotal of Developed, Disturbed, and Agricultural Lands:		**28,156**
Total:		**42,869**

*****Although the Riverside County vegetation maps depict Oak Woodlands within Moreno Valley, City staff has ground truthed these areas and found only non-native eucalyptus and pepper trees.
** An undetermined amount of land classified as field croplands is actually non-native grassland.
*** As of 2004, the dairy/livestock operations were no longer in operation and are considered to be non-native grassland.

The general characteristics of the planning area vegetation classifications and associated floral resources are described below.

Coastal Sage Scrub

Coastal Sage Scrub occupies a total of approximately 6,808 acres of land throughout the planning area, and includes one sub-association, Riversidean Sage Scrub.

Riversidean Sage Scrub. Riversidean Sage Scrub occurs extensively on the plains of western Riverside County, and throughout much of the Moreno Valley region. This phase of sage scrub includes a dominance of low, soft-woody sub-shrubs that are typically drought deciduous. Typical stands are fairly open and dominated by Brittlebush, California Sagebrush, Flat-top Buckwheat, Yellow Bush Penstemon, Black Sage, White Sage, Matchweed, and Deerweed. The understory is often dominated by Red Brome, a noxious introduced weedy species that can sometimes out-compete a number of native annuals for site resources (*e.g.*, water). This community is typically found on dry sites, such as steep slopes, severely drained soils, or clay soils.

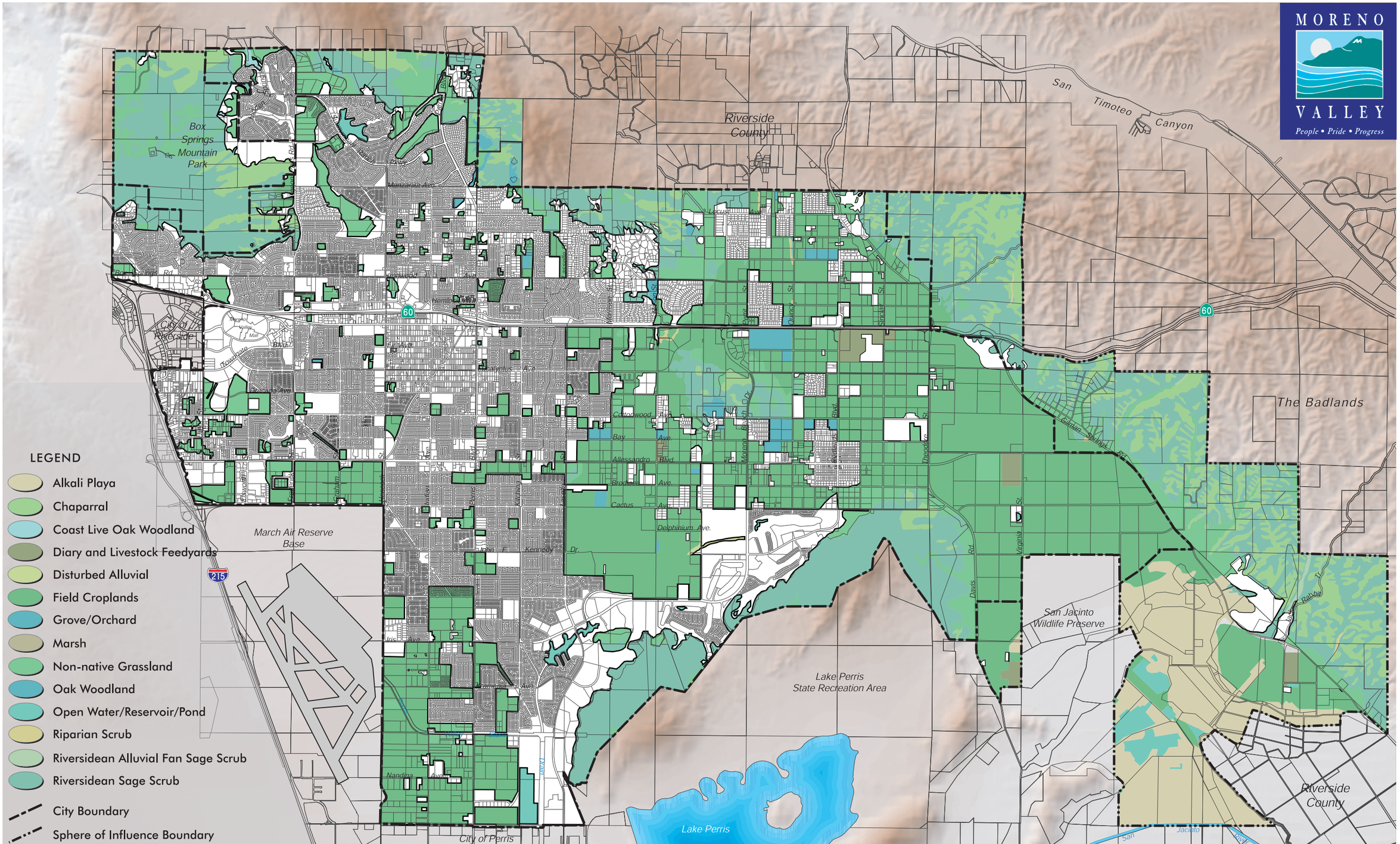


Figure 5.9-2
Planning Area Vegetation Community

Riversidean Sage Scrub is predominantly on the periphery of the Moreno Valley planning area. Substantial tracts occur in the Box Springs Regional Park Section, particularly within Box Springs Mountain Park. Smaller areas of sage scrub occur in the North-Central Section west of Locust Avenue on the northern planning area boundary. Along the eastern edge of the planning area where Moreno Valley meets the Badlands the largest tracts of sage scrub persist within the Norton Younglove and Gilman Springs Road-Badlands Sections (approximately 2,528 acres). Another substantial area of Riversidean Sage Scrub is north of Lake Perris, in the Lake Perris SRA Section. Additionally, sage scrub has been mapped on either side of Moreno Beach Drive, south of State Route 60, in the Central Section.

The quality of the sage scrub habitat in the planning area varies from very low to very high quality. The highest quality sage scrub has been mapped in the Norton Younglove and Gilman Springs Road-Badlands Sections, particularly along the western edge of the Badlands. Areas, such as Box Springs Mountain within Box Springs Regional Park Section and the slopes north of Lake Perris SRA in the Lake Perris SRA Section, support sage scrub habitats ranging from very low to high quality. Sage scrub in the Central and North-Central Sections of the planning area is predominantly low to moderate quality.

Riversidean Alluvial Fan Sage Scrub

Tracts of Riversidean Alluvial Fan Scrub, typically a sub-association of Riversidean Sage Scrub, occur within broad washes of sandy alluvial drainages that carry rainfall runoff sporadically in winter and spring, but remain relatively dry through the remainder of the year. Riversidean Alluvial Fan Sage Scrub is restricted to drainages and floodplains with very sandy substrates that have a dearth of decomposed plant material. These areas do not develop into riparian woodland or scrub due to the limited water resources and scouring by occasional floods. In deeply erosive areas such as the Badlands, numerous stream courses may support narrow bands of this vegetation. Locally, plants may include Scale Broom and Common Groundsel.

Approximately 19 acres of Riversidean Alluvial Fan Sage Scrub is found in areas of the Badlands within the Gilman Springs Road-Badlands Section. Specifically, one band of Riversidean Alluvial Fan Sage Scrub has been mapped within the planning area, running north-south near Jack Rabbit Trail, and continuing north into the Badlands, outside the planning area. Additionally, a second, smaller strip is mapped approximately 2.4 miles northwest of the larger strip. This smaller area of Riversidean Alluvial Fan Sage Scrub also occupies a drainage which continues outside the planning area to the northeast within the Badlands. The quality of these scrub areas is expected to be relatively high given the context of the habitat within undisturbed native communities.

Disturbed Alluvial. This disturbance-associated habitat typically occurs where extensive impacts have denuded a broad sandy floodplain, removing most of the vegetative cover. Such habitat is sometimes associated with sand mining activities. Although such lands may eventually recover to a form of riparian habitat, flooding is

often necessary to introduce the wetland seed components. Small xeric-adapted annuals, such as species of everlasting, may occur sporadically in this open terrain. Mule Fat is usually the first wetland species to pioneer.

Disturbed Alluvium is mapped at only one location within the planning area, southeast of Delphinium Avenue within the Lake Perris SRA Section (approximately 16 acres).

Chaparral

Chaparral is a relatively tall (1.5-3 meters high) plant community dominated by broad-leaved, deep rooted, woody shrubs. Chaparral occurs on dry, rocky, often steep slopes with sparse soils. Shaded, north-facing slopes are generally where the densest vegetation occurs, while south-facing slopes are more open. Occasionally, Chaparral contains substantial patches of bare soil or, as is the case within the planning area, it forms a mosaic with sage scrub. Characteristic species include Chamise, Spanish Bayonet/Mojave Yucca, Mission Manzanita, Our Lord's Candle, Big-berry Manzanita, Holly-leaf Cherry, Laurel Sumac, and Deerweed.

Approximately 2,192 acres of Chaparral has been mapped within the planning area in roughly the same areas as Riversidean Sage Scrub. It is likely that these areas contain several different chaparral sub-associations, including Chamise Chaparral and Southern Mixed Chaparral, which have not been mapped in detail.

Along the northwestern corner of the planning area, within Box Springs Regional Park Section, it occurs in association with sage scrub on the eastern slopes of the park, and north of Sunnymead Ranch Parkway. In the North-Central Section Chaparral occupies vacant lands west of Locust Avenue and north of Ironwood Avenue, and east of Perris Blvd. To the east along the Badlands, Chaparral is interspersed with sage scrub and grasslands within the North-Central, Norton-Younglove, and Gilman Springs Road-Badlands Sections. Smaller patches exist in the Central Section, along Moreno Beach Drive south of State Route 60, and in association with sage scrub on the eastern side of the Lake Perris SRA Section.

The Chaparral within the planning area is relatively undisturbed and contiguous with other native habitat; therefore, the quality of the vegetation is generally considered to be very good. However, where Chaparral borders Non-native Grasslands or agricultural lands, a higher percentage of exotics within the Chaparral edge is expected, thereby decreasing habitat quality.

Non-native Grasslands

Annual, non-native grassland is the most common grassland habitat in Riverside County. This vegetation community develops most commonly where grazing, disking, or fire has disturbed native scrub. Non-native Grasslands usually develop in close association with rural land uses. Holland (1986) describes non-native grasslands as a dense to sparse

cover of annual grasses with flowering culms 0.2-0.5 meters high, often associated with numerous species of wildflowers, especially in years of favorable rainfall. Local grasslands are dominated by grasses such as bromes, wild oats, and barley, as well as non-native forbs such as mustard and filarees.

Non-native Grasslands are widely dispersed throughout the Moreno Valley area, covering approximately 3,231 acres of the planning area occurring in all of the eight planning area sections. They are mapped in association with both native and non-native vegetation communities and occur in a variety of patch sizes. In some instances the regional mapping effort may not have accurately delineated grasslands from agricultural lands. As previously stated, this has been addressed where feasible by ground truthing.

The most substantial areas of Non-native Grasslands occur within Box Springs Regional Park and Gilman Springs Road-Badlands Sections. They are located within the central portion of the Box Springs Regional Park Section, east of the park. Here the grasslands are bordered by a mix of native habitats (sage scrub and chaparral) and residential development. In the Gilman Springs Road-Badlands Section, grasslands occur on the western edge of the Badlands, along Gilman Springs Road. They are bounded to the east by sage scrub and chaparral and to the west by fields and croplands.

Although not considered a native vegetation community, Non-native Grasslands have the capacity to support a variety of wildlife. The quality of Non-native Grassland areas typically relates directly to the size of the patch and to the surrounding vegetation communities and land uses. The large areas of grassland within a larger native habitat context are expected to have high value for wildlife (Box Springs Regional Park and Gilman Springs Road-Badlands grasslands). Smaller, fragmented patches with a more urban or disturbed edge, such as those in the other planning area sections, may have value for a specific animal (*e.g.*, locally nesting, foraging raptor) but their overall value would be decreased.

Non-native Woodlands

Areas mapped by the Riverside County vegetation maps as Oak Woodland and Coast Live Oak Woodland within the Moreno Valley were ground-truthed by City of Moreno Valley staff and found to consist of eucalyptus and pepper trees (City of Moreno Valley 2004). These Non-native Woodland areas occupy approximately 21 acres within the project area. Non-native woodlands occur in the northwestern portion of the project area and at a single location to the northeast. Within the Box Springs Regional Park Section, the largest area of woodland (just over 11 acres) occurs in open space just northwest of Hidden Springs Road. Smaller areas of woodland occur within Box Springs Regional Park, on the northern Planning Area boundary equidistant from the east and west boundaries of the Box Springs Regional Park Section, and east of Perris Blvd.. The only other area mapped as woodland (approximately 2.9 acres) lies on the boundary of the North-Central and Norton Younglove Sections, north of the terminus of Sinclair Street.

These woodlands are generally surrounded by Non-native Grasslands or Croplands and are extremely limited in size. Their quality would generally be considered poor, due to their non-native nature. Where woodlands occur adjacent to Non-native Grasslands they can have value as raptor perches, which promote foraging and eucalyptus may provide raptor nesting areas.

Playas and Vernal Pools

Approximately 2,027 acres of Alkali Playa have been mapped within the planning area. As discussed in detail below, no vernal pools have been mapped within the planning area by the regional vegetation mapping effort.

Alkali Playa. Alkali Alkali Playa is a rare vegetation community type usually composed of low, grayish, microphyllous and succulent shrubs that reach a height of one meter (Holland 1986). Total cover is typically low and the understory is minimal. Characteristic plant species may include Sea-blite/Bush Seepweed, Pickleweed, Alkali Heath, and Salt Grass. According to M&A fieldwork, the native Bush Seepweed, Alkali Heath, and non-native Five-hook Bassia are common on the playas.

Several regionally sensitive plant species are sometimes associated with this regionally declining habitat. In 2001, M&A biologists observed an extraordinarily wet year at Mystic Lake, in the southeastern corner of the planning area. The peripheral salt marsh habitat had expanded well beyond dry years with many plants in full bloom. One of largest known populations of sensitive Salt Marsh Daisy was recorded and seedling Tamarisk were noted on playa areas. Smooth Tarplant was also observed.

Alkali Playa covers much of the far southeastern corner of the project site, within the San Jacinto Wildlife Area-Mystic Lake Section, north of the San Jacinto River. A small area of Alkali Playa also extends into the Gilman Springs Road-Badlands Section. It surrounds open water habitat and lies adjacent to Croplands.

The large, unfragmented expanse of Alkali Playa in the southeastern corner of the planning area is expected to have moderate to very good value. The size of the habitat area combined with the lack of fragmentation and preserve adjacency lead to the expected high value, but edges adjacent to agriculture are expected to have lowered value.

San Jacinto Vernal Pools. Vernal Pools are those areas that pond year-to-year as evidenced by the presence of adequate standing water to support vegetation characteristic of vernal pool habitat in most years. In contrast, alkaline vernal playas are large, shallow, lakes, some of which are the result of man-made topographic features that impede the natural flow of water. They are subject to seasonal flooding and ponding on a less reliable basis, but possess soils and vegetation that develops in response to periodic flooding and low soil permeability (Dudek 2003b). In drier years, these areas support Alkali Grassland habitat (RECON 1995 in Dudek 2003b). Dominant species in Vernal

Pools are typically native annuals, which create a low to moderate level of perennial herbaceous cover.

Alkali Grasslands, Alkali Playas, and Vernal Pools have a shared floristic composition and are often difficult to differentiate (White 1994 in Dudek 2003b). No Vernal Pool areas were identified in the vegetation mapping, but they potentially occur (unmapped) within the planning area. According to the MSHCP, areas within the MSHCP study area potentially affected by existing State and federal wetlands regulations, include the southeastern corner of the planning area, occupied by Alkali Playas and potentially, vernal pools.

Riparian Scrub

Riparian Scrub occupies approximately 26 acres of land throughout the planning area. Riparian Scrub areas most frequently consist of Willow/Mule Fat scrub along intermittent and perennial lowland streams. Arroyo Willow and Mule Fat are typically present. Other shrubby trees including Blue Elderberry, Sandbar/Narrow-leaved Willow, Black Willow, Lance-leaf Willow, and Red Willow may also be present. M&A biologists observed that the Badlands drainage courses contain a lot of Mule Fat and Arrow Weed.

The riparian habitat understory may contain Mugwort, Western Ragweed, California Blackberry, and California Rose. Due to the historical and current disturbance within most of Moreno Valley's riparian habitats, weedy species such as Giant Reed, Pampas Grass, and Tamarisk have become well established.

Small, isolated pockets of Riparian Scrub are mapped in the North-Central Section between Pettit Street and Quincy Street, both north and south of Locust Avenue. An area of Riparian Scrub has also been mapped near the corner of Nason Street and State Route 60 and just west of Gilman Springs Road, in the Central Section. Generally, these areas persist within otherwise cultivated fields adjacent to residential or urban development. Run-off associated with dry season irrigation may help promote these narrow bands of wetland habitat. The quality of these habitats is highly variable. Although their fragmented nature has increased edge effects and decreased overall quality; in some instances, these areas are very valuable to urban tolerant wildlife as refuge, providing cover and a food and water source. Thus, quality of these habitats may be low, but value can nonetheless be high.

Riparian Scrub is also mapped to the east where Moreno Valley meets the Badlands. In both the Norton-Younglove and Gilman Springs Road-Badlands Sections, strips of Riparian Scrub have been mapped within the Chaparral and sage scrub areas. Such riparian areas are expected to be of high quality due to their connectivity with native or semi-native habitats and the decreased likelihood of disturbance or introduction of exotic, invasive species.

Marsh

This generalized habitat may have components of both brackish and freshwater marsh, given the high levels of alkalinity found locally. Soft-flag Cattail is often a primary flora component. Bulrushes, spike sedges, Marsh Fleabane, and Southwestern Spiny Rush are potentially present in marsh habitat. A number of non-native herbaceous perennials may cluster on the periphery of such wetlands.

The only marsh habitat within the planning area lies along the area's southeastern boundary within the San Jacinto Wildlife Area-Mystic Lake Section. Here a patch of marsh lies just within or on the planning area boundary, flanked by Croplands and Alkali Playa. The patch extends southward outside of the planning area toward the San Jacinto River. The marsh's quality is undetermined and the sliver of habitat within the planning area is not substantial.

Open Water/Reservoir/Pond

This category includes all naturally occurring or human-made open water bodies, totaling about 371 acres within the planning area. The 1995 vegetation community delineation is unlikely to have mapped very small agricultural ponds or areas of seasonal ponding water; thus, areas described herein are generally greater than 0.75 acre in size.

The primary concentration of open water occurs in the southeastern corner of the planning area east of the San Jacinto Wildlife Area within the San Jacinto Wildlife Area-Mystic Lake Section. These open water habitats are surrounded by Alkali Playa and Croplands.

Smaller water bodies have been mapped on the boundary of the Lake Perris SRA and East March AFB Sections, at Lasselle Street (within the East March AFB Section), along the Perris Valley Storm Drain (in the Lake Perris SRA Section), east of Moreno Beach Blvd. and south of Cactus Avenue (within the Lake Perris SRA Section), within open space just north of the Lake Perris SRA Section, at Virginia Street (within the San Jacinto Wildlife Area-Mystic Lake Section), north of Sunnymead Ranch Parkway (within the Box Springs Regional Park Section), and north of the intersection of Ironwood Avenue and Morrison Street (in the North Central Section).

Open water, even in the form of stock ponds, reservoirs, and treatment ponds has value for wildlife as a waterfowl migratory stopover location, as water source, and a foraging location for some predators. Areas of natural open water or human-made open water with adjacent open space have higher biological value.

Residential/Urban/Exotic Land

This vegetation category includes all areas of residential and urban development, including completely disturbed areas, such as vacant lots. Disturbed areas typically

support a host of weedy species including, but not limited to, Castor-bean, Fennel, Yellow Star-thistle, and Russian Thistle. Exotic, ornamental plantings are typically associated with development; therefore, they are included within this community. Exotic plantings such as Eucalyptus trees may, in some areas, form non-native, sparse or dense woodlands. However, this category does not include agricultural groves or orchards, which have been classified separately.

This category accounts for much of the planning area (approximately 16,767 acres), particularly the western half of Moreno Valley. With the exception of Box Springs Regional Park and agricultural lands to the south, east of March AFB, residential or urban development occupies all sizable tracts of land within the western half of the planning area. Although residential and urban areas also occur in the eastern planning area, the predominant existing land use is mapped as agriculture.

Specifically, in the Norton-Younglove, Gilman Springs Road-Badlands, and San Jacinto Wildlife Area-Mystic Lake Sections, very little area (5 percent or less) has been mapped as Residential/Urban/Exotic Land. Whereas, in the Lake Perris SRA, Central, and North-Central sections, between 38 percent and 48 percent of the area has been mapped as Residential/Urban/Exotic Land. Also, the Box Springs Regional Park and East March AFB Sections has over half of their acreage mapped as Residential/Urban/Exotic Land.

Residential/Urban/Exotic lands do not typically contain native vegetation or provide essential habitat connectivity; however, exotic woodland habitats do provide nesting and perching habitat for many avian species, particularly raptors.

Agricultural Land

Agricultural Land is shown to occupy approximately 11,389 acres throughout the Planning Area, and includes Field Croplands, Groves/Orchards, and Dairy/Livestock. According to City Staff, an undetermined amount of the area mapped as Field Croplands and Dairy/Livestock is actually Non-native Grassland.

Field/Croplands. This category includes all extensive agricultural operations, such as unoccupied pasture/field areas or herbaceous row crops (approximately 10,800 acres). Field/Croplands typically occupy relatively level terrain and suitable soils for agricultural planting. This habitat type includes a variety of vegetation in different shapes, sizes, and coverage percentages. Crops may vary throughout the year or year to year even within the same field, but they are typically monocultures. Remnant species include Russian Thistle, Common Bindweed, Jimsonweed, Doveweed, and Vinegar Weed.

In contrast to the Residential/Urban/Exotic Land, which dominates the western portion of the planning area, a large portion of the land in the east has been devoted to Field/Croplands. The majority of the western half of the Central Section is mapped as Field/Croplands, as is virtually all of the San Jacinto Wildlife Area-Mystic Lake Section that is not mapped as Alkali Playa or Open Water. Field/Croplands are also mapped

within the East March AFB Section around the Perris Valley Storm Drain and north of Lake Perris State Recreational Area from Virginia Street west to Laselle Street. Additionally, Field/Croplands occupy the southeastern and southwestern portions of the North-Central and Norton-Younglove Sections, respectively.

Field/Croplands do not typically contain any substantial native vegetation; however, these lands do provide foraging grounds for raptorial birds and habitat for small mammal species. These lands may also facilitate local population dispersal of sensitive species by functioning as stepping stone connections between fragmented native habitat.

Groves/Orchards. Orchards/Groves are typically open, single-species, tree-dominated habitats consisting of woody crops including, but not limited to, citrus fruits and avocados. Such crops can be grown on much steeper slopes than those areas used for herbaceous crops and, thus, frequently occur more often on sloped areas and have a patchier distribution. The understory is typically open to facilitate harvesting, and the cultivated tree species may be deciduous or evergreen. Understory plants are herbaceous and may be a planted or natural cover.

The Orchard/Grove community occurs in patches ranging from less than an acre to over 80 acres and totals approximately 364 acres within the planning area. Orchard/Grove lands are concentrated in the North-Central and Central Sections and almost entirely absent from the remaining planning area. They occur in the North-Central Section, east of Perris Blvd., and are scattered across four other North-Central Section locations. Similarly, within the Central Section, they are mapped on parcels scattered across the middle portion of the section.

Although Groves/Orchards do not typically contain native vegetation, they do provide cover for wildlife movement, as well as perch and nest sites for raptorial and passerine bird species.

Dairy/Livestock. This vegetation category includes all intensive agriculture such as dairy farms, feeder lot cattle operations, horse farms, and large-scale poultry farms covering approximately 225 acres of the planning area.

Dairy/Livestock operations have been mapped exclusively in the Central and San Jacinto Wildlife Area-Mystic Lake Sections. They are mapped at Redlands Blvd. and State Route 60, Nason Street and Alessandro Blvd., and on Virginia Street in the Central Section. Within the San Jacinto Wildlife Area-Mystic Lake Section, they are mapped at south of where Jack Rabbit Trail meets Gilman Springs Road. As of 2004, the poultry ranch on Nason Street, the cattle lot on Virginia Street and the horse farm on State Route 60 were no longer in operation and can be considered to be non-native grassland (City of Moreno Valley 2004).

Regional Wildlife Habitat and Fauna

The value of an area to wildlife is primarily dependent on physical and biological factors. Other important factors include the location relative to other land uses, the quality of habitat on and adjacent to the area, and the uniqueness of the habitat within a regional context. The planning area supports habitats ranging from very disturbed to high quality native plant communities. Road bisections, adjacent urban development, and agricultural uses decrease the wildlife value of much of the area, particularly within the western and central portions of the planning area. Areas of prime importance to wildlife are generally concentrated within the Badlands, Box Springs Regional Park, Lake Perris SRA adjacent lands, and San Jacinto Wildlife Area and adjacent lands.

Vegetation communities are discussed below with regard to their generally accepted (and not site specific) wildlife values. Following this discussion, faunal groups are discussed in the context of their expected presence by vegetation community.

Utilization of agricultural areas, particularly Fields/Croplands, by wildlife varies greatly depending upon the crop sown and time of year. Numerous bird and mammal species may be found within certain Field/Croplands in the appropriate season. Conversely, other crops experience low utilization by native wildlife. Orchards/Groves adjacent to Field/Croplands or Non-native Grasslands may be relied upon as perches that facilitate raptor foraging within the adjacent open terrain. Non-native Woodlands and Orchards/Groves also provide cover for wildlife movement and may facilitate local dispersal by individuals otherwise isolated by development. However, they do not generally provide resources to native vertebrates that are comparable to native woodlands.

The unique plant associations that create the sage scrub community support a diverse and frequently abundant sensitive faunal assembly. Southern California sage scrub and Chaparral exhibit extremely high levels of species diversity and endemism. The majority of the species found in the region are dependent upon one or both of these communities, from reptiles to large mammals.

Non-native Grasslands have the potential to support numerous small mammals and provide foraging habitat for raptorial and passerine birds. They are not comparable to Native Grasslands, but can support numerous species if they have a relatively low percentage of weedy exotics such as mustards and are predominantly annual grasses.

Riparian ecosystems provide permanent as well as temporary habitat to many terrestrial organisms. The also provide primary movement corridors. Riparian ecosystems benefit a variety of species through their value as habitat, their water retention capacity, and their ability to buffer the effects of organic nutrients and toxins (Peck 1993). Riparian areas usually harbor greater wildlife diversity and abundance than upland areas and can be important breeding areas for a number of migratory bird species. Many vertebrates that predominantly utilize peripheral habitats such Chaparral or sage scrub also utilize

riparian habitats to varying degrees. Similarly, marsh habitats are typically highly productive and support an array of distinctive species.

Areas of Alkali Playa are not as heavily utilized by wildlife as other native vegetation communities found within the planning area. Disturbed Alluvial is not expected to provide habitat for vertebrate species prior to initial vegetative recovery. Although some small mammals and reptiles from neighboring vegetation communities will traverse this habitat, the lack of vegetation limits the ability of this community to provide adequate cover for resident species.

The following text generally discusses the fauna species known or with a potential to occur in the planning area and their associated habitats. Fauna species are discussed in a regional context; therefore, existing site-specific conditions may differ since species presence cannot be predicted by vegetation community presence alone. In addition, some species are expected to occur in Residential/Urban/Exotic areas; however, this category is not discussed, as it is not the natural or preferred habitat of any native species. Sensitive species are addressed in greater detail in the subsequent, Sensitive Biological Resources portion of the report.

Invertebrates

Limited information is available to provide a thorough description of all invertebrate found within the Moreno Valley region. Butterfly species are frequently the focus of invertebrate discussion and a variety of common species are expected within the planning area. Only potentially significant species are discussed herein. They occur in a wide range of habitats; including sage scrub and Chaparral, open areas devoid of substantial shrub cover such as non-native grasslands and agricultural/disturbed land, as well as more densely vegetated areas such as riparian habitat and woodlands. These habitats provide various host-specific plants suitable for larval development, adult nectar resources, and topographical features, such as hilltops or open ground that aid in courtship and mating.

Quality habitat for a diverse assemblage of butterflies is generally located on the northern, eastern and southern periphery of the planning area in association with native habitats in the Box Springs Regional Park, North-Central, Norton-Younglove, Gilman Springs Road-Badlands, San Jacinto Wildlife Area -Mystic Lake, and Lake Perris SRA Sections. Vernal pool locations are not mapped within the planning area but may occur unmapped, particularly within the San Jacinto Wildlife Area -Mystic Lake Section.

The Quino Checkerspot Butterfly has been recorded from a number of locations in southwestern Riverside County, but Moreno Valley is not among the locations that harbor critical populations. In fact, the planning area was excluded from the recent protocol survey areas and is not addressed in recent Quino Checkerspot Butterfly Recovery Plan (USFWS 2000b and USFWS 2000c). Additionally, the Delhi Sands Flower-loving Fly is not known to occur in the planning area (Dudek 2003b).

In contrast to butterflies, vernal pool brachiopods are strongly restricted to vernal pool habitat, and consequently, many of these species are considered to be sensitive. Available information (Ericksen and Belk 1999 and Dudek 2003b) indicates the presence of three sensitive crustaceans, Vernal Pool Fairy Shrimp, Santa Rosa Plateau Fairy Shrimp, and Riverside Fairy Shrimp within the region.

Amphibians and Reptiles

Amphibians typically occur in riparian habitats with peripheral upland vegetation. Riparian ecosystems often provide temporary ponding water utilized as breeding habitat by various amphibious species, as well as abundant vegetation for cover and foraging. Amphibians will also create burrows in adjacent upland habitats.

Reptiles occur in a variety of habitats, including riparian, woodland, sage scrub, and Chaparral habitats, as well as grasslands and agricultural/disturbed lands. Lizards and snakes utilize rock crevices for cover within the habitat. Quality reptilian habitat is generally located in the Box Springs Regional Park area, the Badlands, and Lake Perris SRA area. However, the agricultural lands located throughout the region are also expected to support several common reptiles and smaller pockets of native habitat, such as those within the middle of the Central Section along Moreno Beach Drive. Expected amphibian and reptile species are listed in **Table 5.9-2**, within their expected habitats; however, these species are not necessarily restricted to the listed habitats.

TABLE 5.9-2
AMPHIBIAN AND REPTILE SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitats	Reptiles[1]
Riversidean Sage Scrub, Alluvial Fan Sage Scrub, and Chaparral	Pacific Treefrog (*Pseudacris regilla*), California Toad (*Bufo boreas halophilus*), Western Spadefoot (*Scaphiopus hammondii*), San Diego Banded Gecko (*Coleonyx variegatus abbottii*), Granite Spiny Lizard (*Sceloporus orcutti*), Western Fence Lizard (*Sceloporus occidentalis*), Side-blotched Lizard (*Uta stansburiana*), San Diego Horned Lizard (*Phrynosoma coronatum blainvillii*), Coastal Whiptail (*Cnemidophorus tigris stejnegeri*), Orangethroat Whiptails (*C. hyperythrus*), Southern Alligator Lizards (*Elgaria multicarinata*), Western Skink (*Eumeces skiltonianus*), Silvery (California) Legless Lizard (*Anniella pulchra pulchra*), Western Threadsnake (*Leptotyphlops humilis*), Coachwhip (*Masticophis flagellum*), Striped Racer (*Masticophis lateralis lateralis*), San Diego Gopher Snake (*Pituophis catenifer annectens*), California Kingsnake (*Lampropeltis getula californiae*), Long-nosed Snake (*Rhinocheilus lecontei*), Coast Patchnose Snake (*Salvadora hexalepis virgultea*), Western Blackhead Snake (*Tantilla planiceps*), Lyre Snake (*Trimorphodon biscutatus*), Night Snake (*Hypsiglena torquata*), Coastal Rosy Boa (*Lichanura trivirgata roseofusca*), Red Diamond Rattlesnake (*Crotalus exsul*), Speckled Rattlesnake (*Crotalus mitchelli*), Southern Pacific Rattlesnake (*Crotalus viridis helleri*), Glossy Snake (*Arizona elegans*), Coastal or California Glossy Snake (*Arizona elegans occidentalis*)
Non-Native Grassland, Field/ Croplands	Pacific Treefrog, California Toad, Western Spadefoot, Orangethroat Whiptails, Southern Alligator Lizards, Western Skinks, Western Fence Lizard, Side-blotched Lizard, San Diego Horned Lizard, Coastal Whiptail, Common Kingsnake (*Lampropeltis getula californiae*), San Diego Gopher Snake, Southern Pacific Rattlesnake, Glossy Snake, Coastal or California Glossy Snake

TABLE 5.9-2
AMPHIBIAN AND REPTILE SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitats	Reptiles[1]
Non-native Woodland	Garden Slender Salamander (*Batrachoseps major major*), Pacific Chorus Frog, California Toad, Orangethroat Whiptails, Southern Alligator Lizards, Western Skinks, Silvery (California) Legless Lizard
Riparian Scrub	Garden Slender Salamander, Pacific Chorus Frog, California Toad, Orangethroat Whiptails, Southern Alligator Lizards, Western Skinks, Two-striped Garter Snake (*Thamnophis hammondii*), San Bernardino Ringneck Snake (*Diadophis punctatus modestus*), California Red-sided Garter Snake (*Thamnophis sirtalis parietalis*), Glossy Snake, Coastal or California Glossy Snake
Marshes and Open Water/ Reservoir/ Pond	Pacific Treefrog, Bullfrog (*Rana catesbeiana*), Southern Pacific Pond Turtles (*Clemmys marmorata pallida*), non-native Sliders (*Trachemys* sp)

[1]Some species may be listed more than once due to their occurrence in multiple habitats.

Birds

Several vegetation communities provide habitat for numerous species of resident and migratory birds. A number of avian species breed within Sage Scrub and Chaparral habitats, and forage among the leaf litter in the vegetative understory. Rocky outcrops, particularly on undisturbed slopes or peaks can provide perching or roosting sites for raptors. Grasslands and agricultural lands located adjacent to woodland areas provide foraging habitat for resident, wintering, and migrant raptors. Avian diversity and abundance is substantial within riparian and woodland habitats. These habitats are comprised of several horizontal niches including canopy, shrub, herb, and ground, which provide a network of valuable roosting, foraging, and breeding areas for birds.

Quality avian habitat within the planning area is concentrated in the areas where native vegetation or foraging habitat is present. In particular, Non-native Grasslands and Croplands within the Moreno Valley area are a significant foraging resource for resident, wintering, and migrant raptors. Numerous biological reports from the planning area note Moreno Valley's critical importance as a raptor wintering area. The abundance of raptors is particularly high in winter due to the influx of migrants, which supplement the resident population. The significance of each foraging area varies based upon several factors, such as habitat quality, as determined by prey productivity; access to hunting perches; proximity to human disturbance; and the level of human disturbance within the vicinity. Raptor species vary in their tolerance of human activity, ability or willingness to utilize different patch sizes, utilization of different vegetation communities, perching requirements or preferences, and preferred prey items.

Textual discussion of all potentially occurring or expected avian species would be extremely lengthy. Therefore, species presence according to habitat is provided in **Table 5.9-3**. Avian species may be observed flying above numerous habitats; however, where there is no clear association (foraging, nesting, or roosting) between the habitat type and the species, the species has not been recorded for that habitat.

TABLE 5.9-3
AVIAN SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitat	Associated Species*	
Riversidean Sage Scrub & Riversidean Alluvial Fan Scrub	Northern Harrier (*Circus cyaneus*) Red-tailed Hawk (*Buteo jamaicensis*) Golden Eagle (*Aquila chrysaetos*) American Kestrel (*Falco sparverius*) Merlin (*Falco columbarius*) Prairie Falcon (*Falco mexicanus*) California Quail (*Callipepla californica*)Mourning Dove (*Zenaida macroura*) Greater Roadrunner (*Geococcyx californianus*) Burrowing Owl (*Speotyto cunicularia*) Lesser Nighthawk (*Chordeiles acutipennis*) Common Poorwill (*Phalaenoptilus nuttallii*) Costa's Hummingbird (*Calypte costae*) Rufous Hummingbird (*Selasphorus rufus*) Allen's Hummingbird (*Selasphorus sasin*) Say's Phoebe (*Sayornis saya*) Western Kingbird (*Tyrannus verticalis*) Loggerhead Shrike (*Lanius ludovicianus*) Common Raven (*Corvus corax*) Coastal Cactus Wren (*Campylorhynchus brunneicapillus couesi*) Rock Wren (*Salpinctes obsoletus*) Canyon Wren (*Catherpes mexicanus*)	Bewick's Wren (*Thryomanes bewickii*) California Gnatcatcher (*Polioptila californica*) Wrentit (*Chamaea fasciata*) Northern Mockingbird (*Mimus polyglottos*) Sage Thrasher (*Oreoscoptes montanus*) California Thrasher (*Toxostoma redivivum*) Yellow-rumped Warbler (*Dendroica coronata*) Lazuli Bunting (*Passerina amoena*) California Towhee (*Pipilo crissalis*) Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*) Bell's Sage Sparrow (*Amphispiza belli belli*) Black-throated Sparrow (*Amphispiz bilineata*) White-crowned Sparrow (*Zonotrichia leucophrys*) McCown's Longspur (*Calcarius mccownii*) Lapland Longspur (*Calcarius lapponicus*) Chestnut-collared Longspur (*Calcarius ornatus*) House Finch (*Carpodacus mexicanus*) Lesser Goldfinch (*Carduelis psaltria*)
Chaparral	Turkey Vulture (*Cathartes aura*) Red-tailed Hawk Golden Eagle California Quail Mourning Dove Greater Roadrunner Anna's Hummingbird (*Calypte anna*) Costa's Hummingbird Rufous Hummingbird Allen's Hummingbird Say's Phoebe Loggerhead Shrike, Western Scrub-Jay (*Aphelocoma californica*) Common Raven Bushtit (*Psaltriparus minimus*) Canyon Wren Bewick's Wren Blue-gray Gnatcatcher (*Polioptila caerulea*) Swainson's Thrush (*Catharus ustulatus*) Hermit Thrush (*Catharus guttatus*) Wrentit	Northern Mockingbird California Thrasher Yellow-rumped Warbler Black-throated Gray Warbler (*Dendroica nigrescens*) Townsend's Warbler (*Dendroica townsendi*) Lazuli Bunting Green-tailed Towhee (*Pipilo chlorurus*) Spotted Towhee (*Pipilo maculatus*) California Towhee Southern California Rufous-crowned Sparrow Black-chinned Sparrow (*Spizella atrogularis*) Bell's Sage Sparrow Fox Sparrow (*Passerella iliaca*) Golden-crowned Sparrow (*Zonotrichia atricapilla*) White-crowned Sparrow Dark-eyed Junco (*Junco hyemalis*) House Finch Lesser Goldfinch Lawrence's Goldfinch (*Carduelis lawrencei*)
Non-native Grasslands, Field/ Croplands	Cattle Egret (*Bubulcus ibis*) White-faced Ibis (*Plegadis chihi*) Greater White-fronted Goose (*Anser albifrons*)	American Crow (*Corvus brachyrhynchos*) Common Raven California Horned Lark (*Eremophila alpestris*

TABLE 5.9-3
AVIAN SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitat	Associated Species*	
	Snow Goose (*Chen caerulescens*)	*actia*)
	Ross' Goose (*Chen rossii*)	Tree Swallow (*Tachycineta bicolor*)
	Canada Goose (*Branta canadensis*)	Violet-green Swallow (*Tachycineta thalassina*)
	White-tailed Kite (*Elanus leucurus*)	Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
	Bald Eagle (*Haliaeetus leucocephalus*)	
	Northern Harrier	Cliff Swallow (*Hirundo pyrrhonota*)
	Swainson's Hawk (*Buteo swainsoni*)	Barn Swallow (*Hirundo rustica*)
	Red-tailed Hawk,	Western Bluebird (*Sialia mexicana*)
	Ferruginous Hawk (*Buteo regalis*)	Mountain Bluebird (*Sialia currucoides*)
	Rough-legged Hawk (*Buteo lagopus*)	European Starling (*Sturnus vulgaris*)
	Golden Eagle	American Pipit (*Anthus rubescens*)
	American Kestrel	Vesper Sparrow (*Pooecetes gramineus*)
	Merlin	Lark Sparrow (*Chondestes grammacus*)
	Peregrine Falcon (*Falco peregrinus*)	Lark Bunting (*Calamospiza melanocorys*)
	Prairie Falcon	Savannah Sparrow (*Passerculus sandwichensis*)
	Ring-necked Pheasant (*Phasianus colchicus*)	Grasshopper Sparrow (*Ammodramus savannarum*)
	Black-bellied Plover (*Pluvialis squatarola*)	
	Killdeer (*Charadrius vociferus*)	Lincoln's Sparrow (*Melospiza lincolnii*)
	Mountain Plover (*Charadrius montanus*)	White-crowned Sparrow
	Long-billed Curlew (*Numenius americanus*)	Red-winged Blackbird (*Agelaius phoeniceus*)
	Franklin's Gull (*Larus pipixcan*)	Tricolored Blackbird (*Agelaius tricolor*)
	Ring-billed Gull (*Larus delawarensis*)	Western Meadowlark (*Sturnella neglecta*)
	California Gull (*Larus californicus*)	Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)
	Rock Dove (*Columba livia*)	
	Mourning Dove	Brewer's Blackbird (*Euphagus cyanocephalus*)
	Barn Owl (*Tyto alba*)	Brown-headed Cowbird (*Molothrus ater*)
	Burrowing Owl (*Speotyto cunicularia*)	House Finch
	Short-eared Owl (*Asio flammeus*)	Lesser Goldfinch
	Say's Phoebe	House Sparrow (*Passer domesticus*)
	Western Kingbird	
	Loggerhead Shrike (*Lanius ludovicianus*)	
Orchards/ Groves and Non-native Woodlands	White-tailed Kite (*Elanus leucurus*)	Red-breasted Nuthatch (*Sitta canadensis*)
	Sharp-shinned Hawk (*Accipiter striatus*)	White-breasted Nuthatch (*Sitta carolinensis*)
	Cooper’s Hawk (*Accipiter cooperii*)	House Wren (*Troglodytes aedon*)
	Red-tailed Hawk	Ruby-crowned Kinglet (*Regulus calendula*)
	Red-shouldered Hawk (*Buteo lineatus*)	Western Bluebird (*Sialia mexicana*)
	American Kestrel	Swainson’s Thrush
	Mourning Dove (*Zenaida macroura*)	Hermit Thrush
	California Quail (*Callipepla californica*)	American Robin (*Turdus migratorius*)
	Common Ground-Dove (*Columbina passerina*)	Northern Mockingbird (*Mimus polyglottos*)
	Barn Owl	European Starling
	Great Horned Owl (*Bubo virginianus*),	Cedar Waxwing (*Bombycilla cedrorum*)
	Costa's Hummingbird	Phainopepla (*Phainopepla nitens*)
	Rufous Hummingbird	Orange-crowned Warbler (*Vermivora celata*)

TABLE 5.9-3
AVIAN SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitat	Associated Species*	
	Allen's Hummingbird	Nashville Warbler (*Vermivora ruficapilla*)
	Acorn Woodpecker (*Melanerpes formicivorous*)	Yellow-rumped Warbler
	Red-breasted Sapsucker (*Sphyrapicus ruber*)	Black-throated Gray Warbler
	Red-naped Sapsucker (*Sphyrapicus nuchalis*)	Townsend's Warbler
	Northern Flicker (*Colaptes auratus*)	MacGillivray's Warbler
	Olive-sided Flycatcher (*Contopus cooperi*)	Wilson's Warbler
	Western Wood-Pewee (*Contopus sordidulus*)	Summer Tanager
	Pacific-slope Flycatcher (*Empidonax difficilis*)	Western Tanager
	Black Phoebe (*Sayornis nigricans*)	Black-headed Grosbeak (*Pheucticus melanocephalus*)
	Say's Phoebe	California Towhee,
	Ash-throated Flycatcher (*Myiarchus cinerascens*)	White-crowned Sparrow
		Yellow-headed Blackbird
	Cassin's Kingbird (*Tyrannus vociferans*)	Brown-headed Cowbird
	Western Kingbird	House Finch
	Cassin's Vireo (*Vireo cassinii*)	Purple Finch (*Carpodacus purpureus*)
	Warbling Vireo (*Vireo gilvus*)	Lesser Goldfinch
	Western Scrub-Jay	American Goldfinch (*Carduelis tristis*)
	American Crow	
	Common Raven	
	Bushtit	
Alkali Playa	Western Snowy Plover (*Charadrius alexandrinus nivosus*)	Killdeer
		Mountain Plover (*Charadrius montanus*)
Riparian and Marsh	American Bittern (*Botaurus lentiginosus*)	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
	Western Least Bittern (*Ixobrychus exilis hesperis*)	Pacific-slope Flycatcher
	Great Blue Heron (*Ardea herodias*)	Black Phoebe (*Sayornis nigricans*)
	Great Egret (*Casmerodius albus*)	Ash-throated Flycatcher
	Snowy Egret (*Egretta thula*)	Vermilion Flycatcher (*Pyrocephalus rubinus*)
	Cattle Egret	Least Bell's Vireo (*Vireo bellii pusillus*)
	Green Heron (*Butorides virescens*)	Cassin's Vireo
	Black-crowned Night Heron (*Nycticorax nycticorax*)	Warbling Vireo
		Tree Swallow
	Green-winged Teal (*Anas crecca*)	Violet-green Swallow
	Mallard (*Anas platyrhynchos*)	Northern Rough-winged Swallow
	Northern Pintail (*Anas acuta*)	Cliff Swallow
	Blue-winged Teal (*Anas discors*)	Barn Swallow
	Cinnamon Teal (*Anas cyanoptera*)	Bushtit
	Northern Shoveler (*Anas clypeata*)	Marsh Wren (*Cistothorus palustris*)
	Gadwall (*Anas strepera*)	Orange-crowned Warbler
	American Wigeon (*Anas americana*)	Nashville Warbler
	Ring-necked Duck (*Aythya collaris*)	Yellow Warbler (*Dendroica petechia*)
	Hooded Merganser (*Lophodytes cucullatus*)	Yellow-rumped Warbler
	Ruddy Duck (*Oxyura jamaicensis*)	MacGillivray's Warbler (*Oporornis tolmiei*),
	Sharp-shinned Hawk	(*Carduelis pinus*)
	Cooper's Hawk	Lesser Goldfinch
	Red-shouldered Hawk	Lawrence's Goldfinch
	Red-tailed Hawk	American Goldfinch

TABLE 5.9-3
AVIAN SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitat	Associated Species*	
	Virginia Rail (*Rallus limicola*)	Common Yellowthroat (*Geothlypis trichas*)
	Sora (*Porzana carolina*)	Wilson's Warbler (*Wilsonia pusilla*)
	Common Moorhen (*Gallinula chloropus*)	Yellow-breasted Chat (*Icteria virens*)
	American Coot (*Fulica americana*)	Summer Tanager (*Piranga rubra*)
	Killdeer	Western Tanager (*Piranga ludoviciana*)
	Short-billed Dowitcher (*Limnodromus griseus*)	Black-headed Grosbeak
	Long-billed Dowitcher (*Limnodromus scolopaceus*)	Blue Grosbeak (*Guiraca caerulea*)
		Song Sparrow (*Melospiza melodia*)
	Common Snipe (*Gallinago gallinago*)	White-crowned Sparrow
	Mourning Dove	Red-winged Blackbird (*Agelaius phoeniceus*)
	Western Screech-Owl (*Otus kennicottii*)	Tricolored Blackbird (*Agelaius tricolor*)
	Black-chinned Hummingbird (*Archilochus alexandri*)	Brown-headed Cowbirds (*Molothrus ater*)
		Hooded Oriole (*Icterus cucullatus*)
	Nuttall's Woodpecker (*Picoides nuttallii*)	Bullock's Oriole (*Icterus bullockii*)
	Downy Woodpecker (*Picoides pubescens*)	House Finch
	Hairy Woodpecker (*Picoides villosus*)	Red Crossbill (*Loxia curvirostra*)
	Western Wood-Pewee	Pine Siskin
Open Water, including shoreline	Pied-billed Grebe (*Podilymbus podiceps*)	Osprey (*Pandion haliaetus*)
	Horned Grebe (*Podiceps auritus*)	Bald Eagle
	Eared Grebe (*Podiceps nigricollis*)	Peregrine Falcon
	Western Grebe (*Aechmophorus occidentalis*)	Common Moorhen
	Clark's Grebe (*Aechmophorus clarki*)	American Coot
	American White Pelican (*Pelecanus erythrorhynchos*)	Semipalmated Plover (*Charadrius semipalmatus*)
		Killdeer
	Double-crested Cormorant (*Phalacrocorax auritus*)	Black-necked Stilt (*Himantopus mexicanus*)
		American Avocet (*Recurvirostra americana*)
	Great Blue Heron	Greater Yellowlegs (*Tringa melanoleuca*)
	Great Egret	Lesser Yellowlegs (*Tringa flavipes*)
	Snowy Egret	Spotted Sandpiper (*Actitis macularia*)
	Cattle Egret	Whimbrel (*Numenius phaeopus*)
	Green Heron	Long-billed Curlew
	Black-crowned Night Heron	Marbled Godwit (*Limosa fedoa*)
	White-faced Ibis	Western Sandpiper (*Calidris mauri*)
	Greater White-fronted Goose	Least Sandpiper (*Calidris minutilla*)
	Snow Goose	Dunlin (*Calidris alpina*)
	Ross' Goose	Short-billed Dowitcher
	Canada Goose	Long-billed Dowitcher
	Wood Duck (*Aix sponsa*)	Wilson's Phalarope (*Phalaropus tricolor*)
	Green-winged Teal	Red-necked Phalarope (*Phalaropus lobatus*)
	Mallard	Franklin's Gull, Herring Gull (*Larus argentatus*)
	Northern Pintail	Bonaparte's Gull (*Larus philadelphia*)
	Blue-winged Teal	Ring-billed Gull
	Cinnamon Teal	California Gull
	Northern Shoveler	Caspian Tern (*Sterna caspia*)
	Gadwall	Forster's Tern (*Sterna forsteri*)
	American Wigeon	Belted Kingfisher (*Ceryle alcyon*)
	Canvasback (*Aythya valisineria*)	Tree Swallow
	Redhead (*Aythya americana*)	Violet-green Swallow

TABLE 5.9-3
AVIAN SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitat	Associated Species*	
	Ring-necked Duck	Northern Rough-winged Swallow
	Lesser Scaup (*Aythya affinis*)	Cliff Swallow
	Greater Scaup (*Aythya marila*)	Black Swift (*Cypseloides niger*)
	Common Goldeneye (*Bucephala clangula*)	Vaux's Swift (*Chaetura vauxi*)
	Bufflehead (*Bucephala albeola*)	White-throated Swift (*Aeronautes saxatalis*)
	Hooded Merganser	
	Common Merganser (*Mergus merganser*)	
	Ruddy Duck	

*Species may be listed in multiple habitats as applicable.

Mammals

Small mammal species typically occur in sage scrub, Chaparral, grasslands and agricultural areas, and several of these species will intermittently use riparian and woodland habitats for foraging and cover. Various species of bats forage in grasslands and woodland habitats, as well as over open water. Meso-predators historically occurred in a variety of upland and riparian habitats, but many have adapted to more disturbed or urbanized habitats and may reach high densities in these communities. Larger mammals often require greater blocks of connected habitat for hunting and travel within their range.

Quality habitat for small mammal species is generally located throughout the planning area; however, the only areas consisting of wider, connected blocks of habitat suitable for larger mammal species are located on the periphery of the planning area where contiguous blocks of native habitat persist in the Badlands, along the northern project boundary and into Box Springs Regional Park, and in the south at Lake Perris SRA. Species presence according to habitat is provided in **Table 5.9-4,** with the exception of bats. Bats use a variety of habitats for specific purposes, foraging, roosting, etc. For this group a textual discussion is more clear and concise and has been provided following the table.

While some mammal species may use Alkali Playa habitat, none are specifically associated with it. In contrast to other faunal groups, there are mammal species which are expected primarily in association with Residential/Urban/Exotic portions of the planning area, including House Mouse, Norway Rat, and Black Rat.

TABLE 5.9-4
MAMMAL SPECIES KNOWN OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Habitats	Reptiles[1]
Riversidean Sage Scrub, Alluvial Fan Sage Scrub, and Chaparral	Desert Cottontail (*Sylvilagus audubonii*), San Diego Black-tailed Jackrabbit (*Lepus californicus bennetii*), Botta's Pocket Gopher (*Thomomys bottae*), Los Angeles Little Pocket Mouse (*Perognathus longimembris brevinasus*), California Pocket Mouse (*Chaetodipus californicus*), Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*), Pacific/Agile Kangaroo Rat (*Dipodomys agilis*), California Mouse (*Peromyscus californicus*), Cactus Mouse (*Peromyscus eremicus*), Deer Mouse (*Peromyscus maniculatus*), Brush Mouse (*Peromyscus boylii*), Piñon Mouse (*Peromyscus truei*), Southern Grasshopper Mouse (*Onychomys torridus ramona*), San Diego Desert Woodrat (*Neotoma lepida intermedia*), Stephens' Kangaroo Rat (*Dipodomys stephensi*), San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*), Ringtail (*Bassariscus astutus*), Western Spotted Skunk (*Spilogale gracilis*), Virginia Opossum (*Didelphis virginiana*), Gray Fox (*Urocyon cinereoargenteus*), Coyote (*Canis latrans*), Mountain Lion (*Puma concolor*), and Mule Deer (*Odocoileus hemionus*).
Non-Native Grassland, Field/Croplands	California Ground Squirrel (*Spermophilus beecheyi*), Botta's Pocket Gopher (*Thomomys bottae*), Stephens' Kangaroo Rat (*Dipodomys stephensi*), American Badger (*Taxidea taxus*), Long-tailed Weasel (*Mustela frenata*), Virginia Opossum (*Didelphis virginiana*), Gray Fox (*Urocyon cinereoargenteus*), Coyote (*Canis latrans*), Desert Cottontail (*Sylvilagus audubonii*), San Diego Black-tailed Jackrabbit
Non-native Woodland	Long-tailed Weasel, Western Gray Squirrel (*Sciurus griseus*), Dusky-footed Woodrat (*Neotoma fuscipes*), Virginia Opossum (*Didelphis virginiana*), Gray Fox (*Urocyon cinereoargenteus*), Coyote (*Canis latrans*), Mule Deer
Riparian Scrub and Marshes	Ornate Shrew (*Sorex ornatus*), Brush Rabbit (*Sylvilagus bachmani*), Western Harvest Mouse (*Reithrodontomys megalotis*), California Vole (*Microtus californicus*), Raccoon (*Procyon lotor*), Virginia Opossum (*Didelphis virginiana*), Striped Skunk (*Mephitis mephitis*), Gray Fox (*Urocyon cinereoargenteus*), Coyote (*Canis latrans*), Bobcat (*Felis rufus*)

[1] Some species may be listed more than once due to their occurrence in multiple habitats.

Resident bats species exist within the planning area. Although breeding habitat for some bat species is absent from the planning area, these species may utilize the edges of the planning area for foraging. Species presence data for bats is limited, especially since they are not typically included within regional species and habitat conservation planning efforts. The determination of species expected within the area is based on the availability of suitable habitat and input from local bat researchers. Potentially present in the planning area are the Yuma Myotis, Long-eared Myotis, Fringed Myotis, Long-legged Myotis, Western Small-footed Myotis, California Myotis, Silver-haired Bat, Western Pipistrelle, Big Brown Bat, Western Red Bat, Hoary Bat, Western Yellow Bat, Pallid Bat, Townsend's West, Big-eared Bat, Brazilian Free-tailed Bat, Pocketed Free-tailed Bat, and California Mastiff Bat.

Sensitive Biological Resources

Regional Sensitive Habitats

According to CEQA (Article 13 §15206), sensitive wildlife habitats include but are not limited to riparian lands, wetlands, bays, estuaries, and marshes and habitats of rare or endangered species (as defined by CEQA Article 13 §15380). Typically, unique vegetation communities (associations of plant species that are rare or substantially depleted, unusual, or limited in distribution) are also considered sensitive, but designations of sensitive habitats outside of the CEQA definition vary between jurisdictions.

Four regionally sensitive habitats are identified within the Planning Area: 1) Riparian Habitats/Wetlands (including Open Water and Marsh), 2) Coastal Sage Scrub/Riversidean Alluvial Fan Sage Scrub, 3) Raptor Foraging/Wintering Habitat, and 4) Core Reserves/Designated Critical Habitat.

Riparian Habitats/Wetlands. Wetlands and associated riparian habitats are extremely limited in southern California. Wetland vegetation communities are given the highest priority within the state inventory by the CNDDB. Many species are dependent upon riparian areas for food, cover, and breeding. Riparian habitats are also valued for their function as wildlife movement corridors and habitat linkages.

Riparian habitats are limited in the planning area, restricted to the linear Riparian Scrub areas mapped within the native habitats of the Badlands (Gilman Springs Road-Badlands and Norton-Younglove Sections) and the persisting Riparian Scrub within the more disturbed and developed context of the North-Central and Central Sections. Open water habitats are scattered throughout the planning area, as previously described in the Regional Vegetation Communities/Flora Section. Marsh occurs only along the extreme southern boundary of the planning area within the San Jacinto Wildlife Area-Mystic Lake Section, north of the San Jacinto River. With the exception of areas such as wastewater treatment ponds and mining ponds, each of these wetland or riparian areas would be considered sensitive, regardless of the surrounding landscape.

Coastal Sage Scrub/Riversidean Alluvial Fan Sage Scrub. Sage scrub has been drastically reduced in southern California, largely due to development. Much of the remaining southern California sage scrub has been fragmented into isolated tracts with a disproportionate amount of edge. Sage scrub occurs in large tracts within the more pristine portions of the planning area, including Box Springs Regional Park (Box Springs Regional Park Section), north of Lake Perris SRA (Lake Perris SRA Section), the Badlands (Gilman Springs Road-Badlands and Norton-Younglove Sections), and along the northern edge of the planning area near Reche Canyon (North-Central and Norton-Younglove Sections). A moderate size patch of sage scrub also persists near Moreno Beach Drive (Central Section); however, this sage scrub is more disturbed, with a dense weedy understory present throughout these hillsides.

Raptor Wintering/Foraging Habitat. The Moreno Valley area is considered to be an important raptor wintering area, because it is a location where raptorial birds concentrate due to a high abundance of roosting sites, a good prey base, and suitable hunting habitat. In fact, Moreno Valley has been repeatedly identified as supporting significant numbers of wintering raptors. According to the Moreno Valley Ranch Specific Plan Environmental Impact Report, CDFG has determined that the entire group of hills surrounding Lake Perris is an important raptor wintering area (City of Moreno Valley 1987). A similar conclusion was reached for the Moreno Valley Ranch area west of San Jacinto Wildlife Area by Pacific Southwest Biological Services (PSBS 1989). In 1979, CDFG designated this area as an "Area of Special Biological Importance" due to the high densities of wintering raptors.

Local grasslands have a preponderance of non-native grasses and forbs; however, any pockets of Native Grasslands would be considered high in value and sensitive. Wildlife diversity and productivity in Native Grasslands is typically greater than Non-native Grasslands. Perennial grasses can provide more palatable food later into the season for rodents, lagomorphs, and other herbivores, because they stay green later into the year (Strait 2000). Therefore, they have the potential to support denser populations of herbivorous mammals for a longer period of time, resulting in corresponding increases in prey availability for raptors and mammalian carnivores. Similarly, the floristic diversity that characterizes most Native Grasslands supports a greater variety of insects, and has a greater probability of supporting insectivorous birds and mammals. Lizards are more common in grasslands with openings and bare ground, such as those around native bunchgrasses, and a number of birds rely on habitat features provided by bunchgrasses or open grasslands (Strait 2000). Although not comparable to Native Grasslands, the Non-native Grasslands in Moreno Valley have an increased value and significance due to their known capacity to support resident, wintering, and transient raptor populations. In addition, some Field/Cropland areas provide valuable foraging habitat.

As discussed within the previous Regional Vegetation Communities/Flora section, grasslands have been mapped in all sections of the planning area and occur in conjunction with both native habitats (on the planning area periphery) and developed or disturbed areas (within the more central portions of the planning area). Large areas of Field/Croplands occur predominantly in the southeast portion of the planning area. Those areas adjacent to native habitats are expected to be of higher value for raptor foraging, but an assessment of the value and sensitivity of individual grassland or Field/Cropland areas would require area by area investigation.

Stephens' Kangaroo Rat Habitat Conservation Plan Core Reserve. The Stephens' Kangaroo Rat Habitat Conservation Plan Core Reserve areas consist of the San Jacinto-Lake Perris Core Reserve and Potrero Area of Critical Concern (ACEC) Core Reserve. Both core reserves occur partially within and adjacent to Moreno Valley. These areas are considered sensitive habitat areas.

The San Jacinto-Lake Perris Core Reserve encompasses 10,932 acres located south of central Moreno Valley and north of the Ramona Expressway. Most of the Stephens' kangaroo rat occupied habitat in this reserve occurs west of Davis Road and northeast of the Lake Perris reservoir in the State Recreation Area. The northeast portion of this reserve extends east of Gilman Springs Road and connects with the Badlands. The steep hills along the northwest boundary of the reserve act as a buffer to protect the occupied habitat from development in Moreno Valley (RCHCA 1996). However, small patches of Stephens' kangaroo rat occupied habitat along Davis Road are potentially vulnerable to the effects of the roadway and adjacent development (RCHCA 1996). It should be noted that, according to recent information provided by the City of Moreno Valley in 2003, Davis Road has been vacated and is no longer an issue. In addition to Stephens' Kangaroo Rat, 13 other sensitive species are known to occur within this core reserve (RCHCA 1996).

The Potrero ACEC Core Reserve is located south of State Route 60 and east of Gilman Springs Road. This area is owned and managed by the U.S. Bureau of Land Management (BLM). The BLM has committed to managing the area in a manner consistent with the goals and objectives of the Stephens' Kangaroo Rat Habitat Conservation Plan (HCP) (RCHCA 1996). This reserve area also supports at least four other sensitive species (RCHCA 1996).

Proposed and Designated Critical Habitat for Federal Threatened and Endangered Species. Critical habitat areas for the Riverside Fairy Shrimp, Arroyo Toad, California Red-legged Frog, Southwestern Willow Flycatcher, and Least Bell's Vireo are located outside of Moreno Valley. No critical habitat areas for the species are located within Moreno Valley. The critical habitat designation for the California Gnatcatcher and the proposed designation for the San Bernardino kangaroo rat include habitat within and/or immediately adjacent to Moreno Valley (USFWS 2000a and 2000d). Critical habitat maps can be found in Volume II Appendix E of this EIR.

Critical habitat designation is important for federal activities and the processing of federal permits. Under Section 7 (a) (2) of the Endangered Species Act, federal agencies planning or permitting activities involving critical habitat must consult with the Fish and Wildlife Service and ensure that their actions do not harm a listed species or its critical habitat.

Unit 10 of the California Gnatcatcher Critical Habitat encompasses approximately 199,940 acres within the proposed MSHCP planning area. Areas providing essential linkages between core populations occur in the Lake Perris area, the Badlands, and Box Spring Mountains (USFWS 2000d). These areas provide connectivity between core populations within and outside of the County (USFWS 2000d).

San Bernardino Kangaroo Rat Proposed Critical Habitat Unit 3, San Jacinto River-Bautista Creek, encompasses approximately 10,104 aces in Riverside County including areas along the San Jacinto River (USFWS 2000a). This species occupies the San Jacinto

Valley and foothills of the Badlands. Areas proposed for designation are primarily, but not entirely, restricted to floodplains. Within the planning area, habitats adjacent to Gilman Springs Road and Jack Rabbit Trail are proposed for designation as Critical Habitat. The area south of the roads and east of Davis Road is also proposed for designation.

MSHCP Conservation Area Cores and Linkages/Wildlife Corridors

The Moreno Valley planning area is located within the Multi-Species Habitat Conservation Plan (MSHCP). The MSHCP identifies cores for habitat conservation and linkages for wildlife movement (**Figure 5.9-3**). Wildlife corridors are important to the continued functioning of local and regional ecosystems.,

The Moreno Valley planning area is partially located within Subunits 1, 2, 3, and 4 of the MSHCP, Reche Canyon/Badlands Area Plan (Dudek 2003a) (**Figure 5.9-4**). A portion of the land within the Reche Canyon/Badlands Area Plan must be conserved. The target for conservation within the Reche Canyon/Badlands Area Plan is 10,520 to 15,610 acres. The target for conservation within the current city boundary is only 80-130 acres. Target conservation acreages are also established for each subunit. Each subunit is further divided into cell groups and cells with specific conservation objectives .

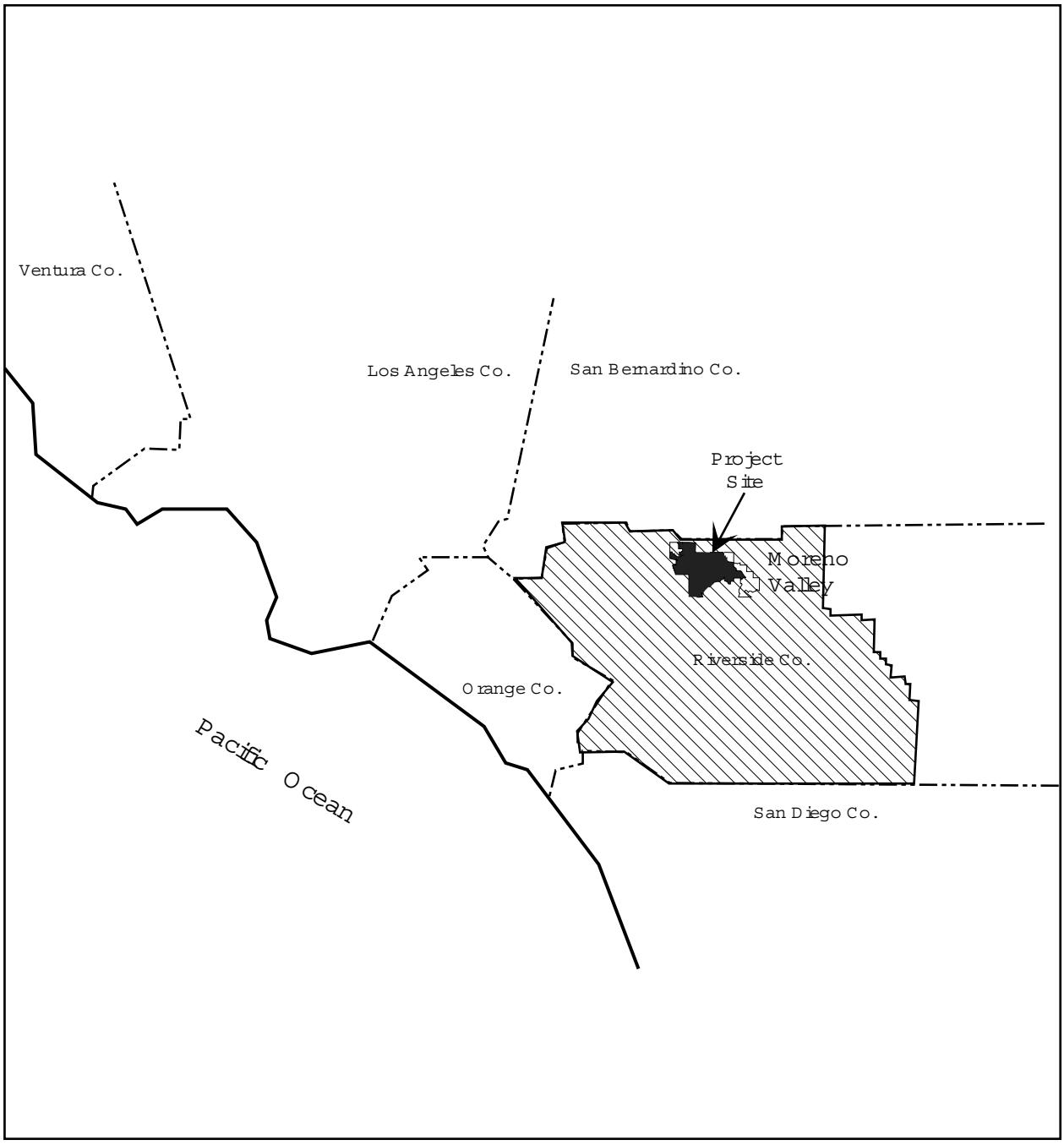
Subunit 1, Box Springs – East and Proposed Constrained Linkage 8

Subunit 1 is located in the northwest portion of the planning area for the Moreno Valley General Plan, next to Box Springs Regional Park. the focus of MSHCP conservation for Subunit 1 is to conserve existing, intact upland habitat augmenting existing Box Springs Mountain Reserve, conserve existing populations of the Bell's Sage Sparrow and Cactus Wren, and maintain the linkage area to Box Springs Mountain for the bobcat (Dudek 2003a). Conservation of this Subunit will focus on sage scrub and grasslands and will contribute to assembly of Constrained Linkage 8.

Proposed Constrained Linkage 8 is comprised of upland habitats in the Pigeon Pass Valley and connects two existing noncontiguous habitat blocks in the Box Springs Mountain area.

Subunit 2, Reche Canyon and Proposed Linkage 4

Subunit 2 overlaps the northwest portion of the Moreno Valley General Plan planning area. The majority of Subunit 2 is situated north of the current city limits, between Pigeon Pass Road and Reche Canyon Road. The portion of the Subunit within the current city limits lies between Pigeon Pass Road and Perris Boulevard. The focus of conservation for Subunit 2 is to conserve upland habitat in the Badlands, maintain a connection between Blue Mountain to the west and Reche Canyon, conserve existing population of the Bell's sage sparrow, maintain core areas for Nevin's barberry, bobcat, and mountain lion (Dudek 2003a).



Source: SCAQMD CEQA Manual, 1993

Western County MSHCP Study Area

County Boundaries

Not to Scale

North

Figure 5.9-3
Project Site Location within the MSHCP Area

Proposed Linkage 4 is comprised of upland habitats in Reche Canyon, immediately north of the Moreno Valley General Plan planning area. This linkage is anticipated to link with Box Springs Reserve, the Badlands, and San Bernardino County (Dudek 2003a). It does not overlap the planning area, but MSHCP text indicates that portions of the planning area (MSHCP Subunit 2, Cell Groups I, L, and M) contribute to the assembly of Proposed Linkage 4. Conservation within this area is to focus on chaparral, sage scrub, and grasslands. Proposed Linkage 4 chaparral and sage scrub provide habitat for species including Bell's sage sparrow, Stephens' kangaroo rat, bobcat, and Nevin's barberry.

Subunit 3, Badlands – North and Proposed Core 3

Subunit 3 overlaps the northeast portion of the planning area for the Moreno Valley General Plan. It consists of substantially mountainous terrain situated north of the current city limits, east of Perris Boulevard and east of the city limits, north of Ironwood Avenue. Within the Moreno Valley planning area, the focus of conservation for Subunit 3 is to conserve large habitat blocks in the Badlands, maintain a linkage area to the San Jacinto Wildlife Area for the Stephens' kangaroo rat, maintain core areas for Nevin's barberry and bobcat, and maintain core and linkage habitat for mountain lion (Dudek 2003a).

Subunit 4, San Jacinto Wildlife Area/Mystic Lake and Existing Core H

Subunit 4 overlaps a portion of the southeastern portion of the Moreno Valley General Plan planning area. It includes portions of the steeply sloping terrain in the Badlands, northeast of Gilman Springs Road, as well as the floodplain of the San Jacinto River, southwest of Gilman Springs Road. The focus of conservation for Subunit 4 is to conserve alkali playa and other habitats to augment existing conservation areas in the San Jacinto Wildlife Area and Mystic Lake; conserve existing vernal pool complexes associated with the San Jacinto River floodplain in the Mystic Lake/San Jacinto Wildlife area; provide a connection of intact habitat between San Jacinto Wildlife Area/Mystic Lake and the Badlands area to the north; conserve Willow-Domino-Travers soils supporting sensitive plants; maintain a continuous linkage along the San Jacinto River from the southern boundary of the Reche Canyon/Badlands Area Plan to the Southeastern Area Plan boundary, and maintain linkages for the Stephens' kangaroo rat and bobcat (Dudek 2003a). Existing Core H is comprised of Lake Perris State Recreation Area (SRA), San Jacinto Wildlife Area, private lands and lands with pre-existing conservation agreements (Dudek 2003a). It provides habitat for several sensitive, MSHCP planning species, contains suitable soils for narrow endemic plant species, supports vernal pools, and may provide a connection to MSHCP Core Areas in the Badlands and the San Jacinto River (Dudek 2003a).

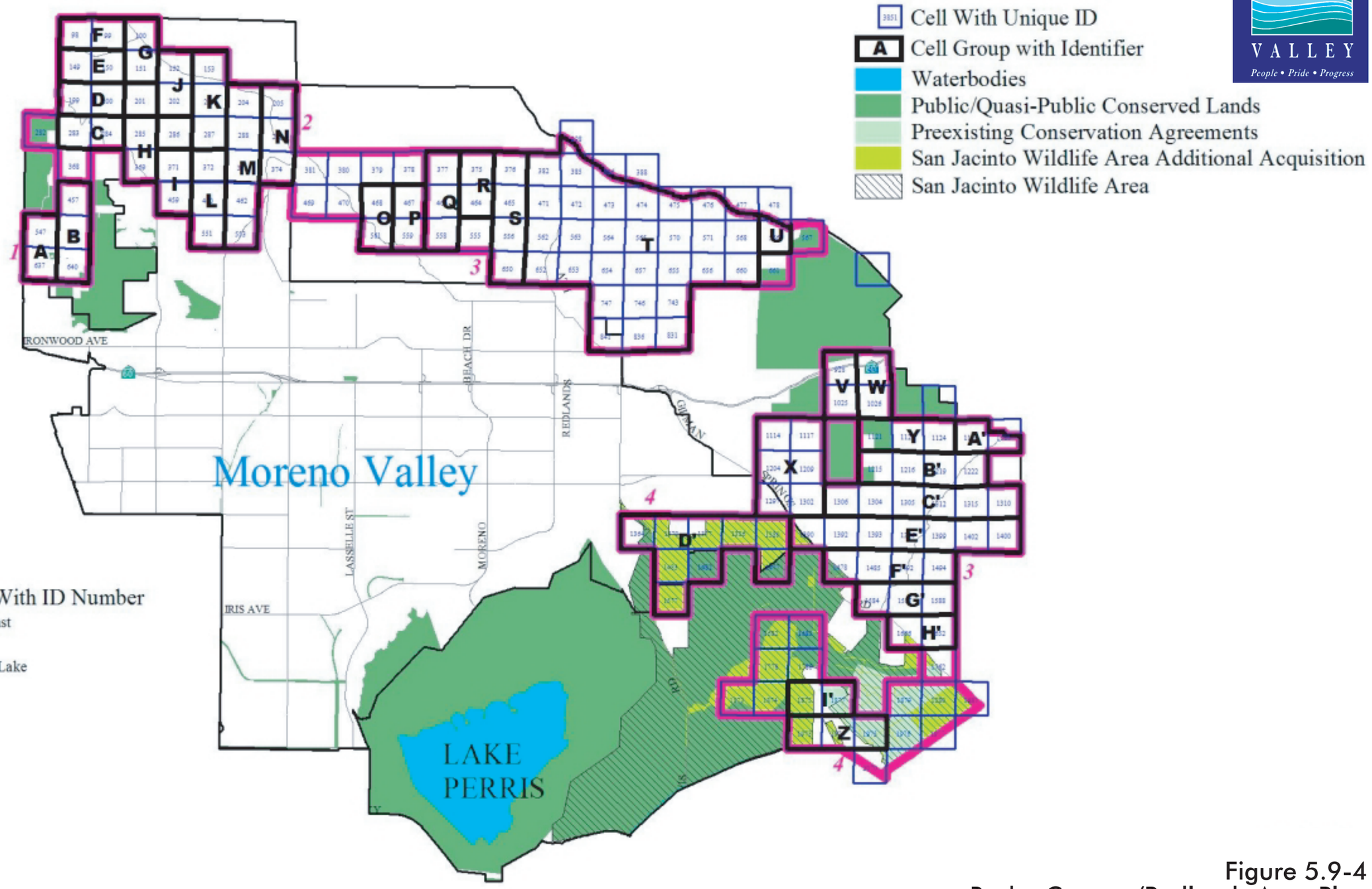


Figure 5.9-4
Reche Canyon/Badlands Area Plan

Rare, Threatened, Endangered, Endemic, and/or Sensitive Species, or MSHCP Covered Species

Sensitive species are generally divided into low and high sensitivity. Any species listed as threatened or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA) is considered a high sensitivity species. Species proposed for listing may also be considered high sensitivity. Low sensitivity species include those listed by U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) as Species of Special Concern or by CDFG as Special Animals. Species of Special Concern are considered sensitive because of declining population levels, limited ranges, and/or continuing threats, which have made them vulnerable to extinction. Special Animals refers to taxa that meet criteria established by the California Department of Fish and Game Natural Diversity Database (CNDDB). These species are either listed, rare, declining, associated with a declining habitat, have a limited range, or are listed as sensitive by other state or federal agencies, or non-governmental organizations.

Sensitive plants include those listed by USFWS (1999, 2003, and 2003b) and CDFG (2003b). Sensitive wildlife species include those listed by USFWS (1999, 2003, and 2003a) and CDFG (2003a). Sensitive species observed in Moreno Valley were limited; however, numerous mammalian species can be difficult to detect during limited diurnal surveys and/or without trapping. A number of sensitive species recorded from the region are expected to use portions of the planning area.

Table 5.9-5 summarizes the rare, threatened, endangered, endemic, and/or sensitive species known from or with a potential to occur in the planning area, based on existing MSHCP and California Department of Fish and Game Natural Diversity Database data, as well as general knowledge of sensitive species occurrences in the identified habitats. It provides sensitivity status, MSHCP status, suitable habitat description applicable to the planning area (*e.g.*, appropriate habitat for wintering species, as opposed to nesting habitat), status within the planning area, and expected and/or known occurrence by the eight planning area sections.

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Plants							
Acanthomintha ilicifolia	San Diego Thorn Mint	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/clay; elevation 10-935 meters. Annual herb, blooms April-June	FT/SE	List: 1B		San Diego Thorn Mint has been reported to occur in a location northwest of Moreno Valley (Reiser 2001). This population may have been extirpated.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Allium munzii	Munz's Onion	Heavy clay soils within chaparral, coastal scrub, and valley and foothill grassland.	FE/ST	List: 1B	NE, Covered	No reported populations within the Moreno Valley Planning Area, but could occur in small numbers undetected on clay soils in grassland/sage scrub.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Atriplex parishii	Parish's Brittlescale	Chenopod scrub, playas, vernal pools; elevation 25-1,900 meters. Found in association with Traver-Domino-Willows soils. Annual herb, blooms June-October	SP	List: 1B	Covered	Although no current populations are known from the lower and middle segments of the San Jacinto River, Mystic Lake, or the San Jacinto Wildlife Area, these areas support suitable habitat, and historical localities imply that these areas may also be key to the species survival (Dudek 2003b).	SJWP
Atriplex coronata var. *notatior*	San Jacinto Valley Crownscale	Playas, valley and foothill grassland (mesic), vernal pools/alkaline; elevation 380-500 meters. Found in association with Traver-Domino-Willows soils. Annual herb, blooms April-August	FE	List: 1B	Covered	San Jacinto Valley Crownscale populations are located in association with San Jacinto River and Mystic Lake (Dudek 2003b).	SJWP
Atriplex serenana var. davidsonii	Davidson's Saltscale	Coastal bluff scrub, coastal scrub/alkaline; elevation 10-200 meters. Found in association with Traver-Domino-Willows soils. Annual herb, blooms April-October	SP	List: 1B	Covered	Primarily restricted to the alkali floodplains of the San Jacinto River and Mystic Lake. It has been reported along the middle segment of the San Jacinto River floodplain from Mystic Lake south to the Ramona Expressway (Dudek 2003b).	SJWP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Berberis nevinii	Nevin's Barberry	Chaparral, cismontane woodland, coastal scrub, riparian scrub/sandy or gravelly; elevation 295-825 meters. Shrub (evergreen), blooms March-April	FE/SE	List: 1B	Covered	Primarily distributed within the San Timoteo/Badlands area (Dudek 2003b).	BAD, NY
Brodiaea filfolia	Thread-leaved Brodiaea	Chaparral (openings), cismontane woodlands, coastal scrub, playas, valley and foothill grassland, vernal pools/ often clay loamy sand, or alkaline silty-clay soils; elevation 40-1,220 meters. Perennial herb (bulbiferous), blooms March-June	FT/SE	List: 1B	Covered	Occurs in population clusters along the San Jacinto River. South of the San Jacinto Wildlife Area there are about 3,800 acres of potentially suitable habitat for Thread-leaved Brodiaea on private lands along the San Jacinto River floodplain and in the upper reaches of Railroad Canyon. Three populations of brodiaea have been found here. Core locations include the San Jacinto River just southwest of Mystic Lake (Dudek 2003b).	SJWP
Brodiaea orcuttii	Orcutt's Brodiaea	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools/mesic, clay, sometimes serpitinite; elevation 30-1,615 meters. Perennial herb (bulbiferous), blooms May-July	SP	List: 1B	Covered	Not known from the Planning Area, but could occur undetected within suitable habitat.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Caulanthus simulans	Payson's Jewel-flower	Chaparral, coastal scrub/sandy granitic; elevation 90-2,200 meters. It frequently occurs on rocky steep slopes, in burned areas or in disturbed sites such as streambeds. Annual herb, blooms March-June	SP	List: 4	Covered	Although not reported within the Planning Area by the MSHCP documents, Payson's Jewelflower is known from the Moreno Valley area including Reche Canyon, March Air Reserve Base, and Moreno Valley itself (Reiser 2001).	NC, NY, AFB, BAD

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Centromadia pungens ssp. laevis	Smooth Tarplant	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland/alkaline; elevation 0-480 meters. Annual herb, blooms April-September	SP	List: 1B	Covered	This species is primarily restricted to alkali floodplains. It has been recorded southeast of the San Jacinto Reservoir; immediately to the north, east of the duck ponds at the San Jacinto Wildlife Reserve; and in Moreno Valley, one mile south of Highway 60 and Dracaea Avenue on the west side of Nason Street (Reiser 2001). It was also recorded in the Mystic Lake area by M&A biologists in 2001. Core locations within the MSHCP area have only been partially identified, but they include (but are not limited to) the San Jacinto Wildlife Area and the middle segment of the San Jacinto River (Dudek 2003b).	SJWP, C
Chorizanthe parryi var. *parryi*	Parry's Spineflower	Chaparral, coastal scrub within sandy or rocky openings; elevation 40-1,705 meters. It is primarily restricted to alluvial floodplains and alluvial chaparral. Annual herb blooms April-June		List: 3	Covered[2]	Known from Moreno Valley, Reche Canyon, and Gilman Hot Springs Road (Dudek 2003b).	NC, NY, BAD
Convolvulus simulans	Small-flowered Morning Glory / Clay Bindweed	Chaparral (openings), coastal scrub, valley and foothill grassland/clay, serpentinite seeps; elevation 30-700 meters. Annual herb, blooms March-July	SP	List: 4	Covered	Not known from the Planning Area, but could occur undetected within suitable habitat/soils.	May not occur in Planning Area. Insufficient data to determine "expected" locations.

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Dodecahema leptoceras	Slender-horned Spineflower	Chaparral, cismontane woodland, coastal scrub/alluvial scrub, sandy; elevation 200-760 meters. May be dependent upon alluvial scrub that is maintained by flooding. Annual herb, blooms April-June	FE/SE	List: 1B	NE, Covered	Known from the upper San Jacinto River (outside the Planning Area). Low potential for undetected occurrence within suitable habitat in Planning Area.	BAD
Githopsis diffusa ssp. filicaulis	Mission Canyon Bluecup	Chaparral (mesic, disturbed areas); elevation 450-700 meters. Annual herb, blooms April-June	SP	List: 3		Not known from the Planning Area, but could occur undetected within suitable habitat.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Harpagonella palmeri	Palmer's Grapplinghook	Chaparral, coastal scrub, valley and foothill grassland/clay; elevation 20-830 meters. Annual herb, blooms March-May	SP	List: 4	Covered	Not known from the Planning Area, but could occur undetected within suitable habitat.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Hordeum intercedens	Vernal Barley / Little Barley	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools; elevation 5-1,000 meters. Annual herb, blooms March-June	SP	List: 3	Covered	Populations include those identified at the San Jacinto Wildlife Area and the San Jacinto River floodplain from Mystic Lake south to I-215 (Dudek 2003b).	SJWP
Lasthernia glabrata ssp. coulteri	Coulter's Goldfields	Marshes and swamps (coastal salt), playas, vernal pools; elevation 1-1,220 meters. Coulter's Goldfields occur primarily in association with the Traver-Domino-Willows soil association. Annual herb, blooms February-June	SP	List: 1B	Covered	The largest and most significant populations within the MSHCP area are within the San Jacinto Wildlife Area and southern shores of Mystic Lake (Dudek 2003b). This represents the largest remaining concentration of this species in its known range and is an MSHCP core population. In 2001, a thriving population was observed by M&A biologists at Mystic Lake.	SJWP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Malacothamnus parishii	Parish's Bush Mallow	Chaparral, coastal sage; elevation 305-455 meters. Shrub, deciduous, blooms June-July.		List: 1A		Not known from the Planning Area, may be extinct. Very low potential for undetected occurrence within suitable habitat.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Microseris douglasii ssp. platycarpha	Small Flower Microseris	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools/clay; elevation 15-1,070 meters. Annual herb, blooms March-May	SP	List: 4		Not known from the Planning Area, but could occur undetected within suitable habitat.	May not occur in Planning Area. Insufficient data to determine "expected" locations.
Mimulus diffusus	Palomar Monekyflower	Chaparral, lower montane coniferous forest/ sandy or gravelly; elevation 1,220-1,830 meters. Annual herb, blooms April-June	SP	List: 4	Covered	It has been reported in the Reche Canyon area, but is not known from the Planning Area. It may occur, undetected, in areas of sufficient elevation and suitable habitat.	NY
Navarretia fossalis	Spreading Navarretia / Prostrate Navarretia	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools; elevation 30-1,300 meters. Annual herb, blooms April-June	FT/SP	List: 1B	NE, Covered	Riverside County supports the largest remaining populations of Spreading Navarretia, and these populations are associated with the largest areas of available habitat in the United States (Dudek 2003b). One of the primary areas of occurrence for this species is along the San Jacinto River, extending from just west of Mystic Lake south to the Perris Valley Airport (Dudek 2003b). It has also been reported near Davis Road by the San Jacinto Wildlife Reserve. MSHCP core locations/populations of Spreading Navarretia include the alkali habitats within the project	SJWP, LP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
						vicinity, the San Jacinto Wildlife Area (Dudek 2003b).	
Phacelia ciliata var. *opaca*	Great Valley Phacelia / Merced Phacelia	Valley and foothill grassland (clay); elevation 60-150 meters. Annual herb, blooms February-May		List: 1B		Not known from the Planning Area, but could occur undetected within suitable habitat, particularly near Mystic Lake.	SJWP
Trichocoronis wrightii var. *wrightii*	Wright's Trichocoronis	Meadows and seeps, marshes and swamps, vernal pools/alkaline; elevation 5-435 meters. Annual herb, blooms May-September		List: 2	NE, Covered	This species is known from four locations along the San Jacinto River from the vicinity of the Ramona Expressway and San Jacinto Wildlife Area and along the northern shore of Mystic Lake (Dudek 2003b). Due to its overall rarity, both of the recently confirmed locations, middle segment of the San Jacinto River and San Jacinto Wildlife Area, are core locations (Dudek 2003b).	SJWP
Invertebrates							
Branchinecta lynchi	Vernal Pool Fairy Shrimp	Short-lived/seasonal, cool vernal pools. Alkali pools appear to be important (Dudek 2003b).	FT/SA		Covered	Known from the general western Riverside area, but not reported from Moreno Valley. May occur detected.	SJWP
Euphydryas editha quino	Quino Checkerspot	Open grassland and openings within shrub habitats that support Dwarf Plantain (*Plantago erecta*) or other recognized host plants.	FE/SA		Covered	Moreno Valley was excluded from the recent protocol survey areas and is not addressed in recent Quino Checkerspot Butterfly Recovery Plan (USFWS 2000b and USFWS 2000c). Persistence of a population is not likely, but cannot be ruled out where appropriate habitat persists. No key MSHCP populations occur within the Planning Area (Dudek 2003b).	

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Streptocephalus woottoni	Riverside Fairy Shrimp	The Riverside Fairy Shrimp is restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds (Ericksen and Belk 1999). Found in various pools in Western Riverside, Orange and San Diego Counties. Pools are at elevations ranging from 30-415 m in seasonal grasslands, which may be interspersed among chaparral or coastal sage scrub vegetation.	FE/SA		Covered	Two known sites occurred along Highway 79, but not within the Planning Area, and have been graded. Other undiscovered populations may occur in the vicinity; however, the species has not been reported within the Planning Area.	
Amphibians							
Spea hammondii	Western Spadefoot	Prefers sandy or gravelly soil in grasslands, sage scrub, open chaparral, and pine-oak woodlands; grasslands with shallow temporary pools are optimal	FSC/ CSC		Covered	Between the City of Riverside and Moreno Valley, north of Highway 60, the Badlands, and March Air Force Base. MSHCP key population areas include areas that still support intact grassland, vernal pool, sage scrub, Chaparral, riparian, and scrub/grassland vegetation communities (Dudek 2003b).	BSRP, NC, NY, BAD, SJWP, LP
Reptiles							
Anniella pulchra pulchra	Silvery Legless Lizard	Shows a preference for areas of leaf litter and loose soil along washes, beach sand dunes, open scrub and woodland, and sandy benches along alluvial fans.	FSC/ CSC			Specific occurrences are not mapped but areas of sage scrub, alluvial scrub, chaparral, woodlands, and even agricultural (orchard) areas with friable soils may support the species. The alluvial habitats near Gilman Springs Road may be of particular importance.	BSRP, NY, BAD, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Clemmys marmorata pallida	Southern Pacific Pond Turtle/Western Pond Turtle	Permanent or nearly permanent bodies of water below 600 ft. Require basking sites such as partially submerged logs, vegetation mats or open mud banks.	FSC/ CSC		Covered	The San Jacinto River may be an important location for this turtle (Dudek 2003b); in addition, it may occur in open water habitats in the southern portion of the Planning Area, in relative proximity to the river.	SJWP
Cnemidophorus hyperythrus	Orangethroat Whiptail	Sage scrub (and chaparral), prefers sandy areas with patches of brush and rocks; may be associated with buckwheat and Black Sage	CSC		Covered	In scrub, chaparral, and flood plain habitat to 1,040 meters. These areas are also considered to be key populations (Dudek 2003b).	BSRP, NC, NY, BAD, LP, C
Cnemidophorus tigris multiscutatus	Coastal Whiptail	Coastal Sage Scrub, chaparral, and grasslands	SA		Covered	In open grassland and/or scrub, which is also considered to be the key population areas (Dudek 2003b).	BSRP, NC, NY, BAD, LP, C
Coleonyx variegatus abbotti	San Diego Banded Gecko	Areas of rock outcrop within sage scrub and chaparral	SA		Covered	Point data (CNDDB through the MSHCP) indicates species presence in Moreno Valley (Dudek 2003b). Key MSHCP areas include locations where granitic rock outcrops are present within scrub or chaparral (Dudek 2003b).	BSRP, NC, NY, BAD, LP, C
Crotalus ruber ruber	Northern Red Diamond Rattlesnake	Occupies rocky outcrops and areas of heavy brush or rugged terrain in chaparral, sage scrub, or desert scrub on both coastal and desert slopes, usually below 4000 feet	CSC		Covered	In scrub and chaparral habitats with rock outcrops. These areas are also considered to be key populations (Dudek 2003b).	BSRP, NC, NY, BAD, LP, C
Diadophis punctatus modestus	San Bernardino Ringneck Snake	Occupies a variety of habitats including Riparian Scrub, woodlands, chaparral, sage scrub (although less likely in the xeric scrubs), and grasslands.	SA			Not specifically mapped, but expected in appropriate native habitats throughout much of the project area, woodlands and riparian areas may be of particular importance.	BSRP, NC, NY, BAD, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Lichanura trivirgata roseofusca	Coastal Rosy Boa	Rocky outcrop areas within chaparral and sage scrub	FSC/SA			Expected in association with relatively undisturbed scrub and chaparral containing substantial rock outcrops.	BSRP, NC, NY, BAD, LP
Phrynosoma coronatum bainvillii	San Diego Horned Lizard	Chaparral, sage scrub, oak woodlands, and grasslands; sometimes occurs along seldom used dirt roads where native ant species are prevalent	CSC		Covered	This species is expected within appropriate habitats up to 2,100 meters. These areas are also considered to be key populations (Dudek 2003b).	BSRP, NC, NY, BAD, C
Salvadora hexalepis virgultea	Coast Patch-nosed Snake	Chaparral and sage scrub; may require mammal burrows or woodrat nests for overwintering	CSC			Expected in association with relatively undisturbed scrub and chaparral within the Planning Area.	BSRP, NC, NY, BAD, LP
Thamnophis hammondii	Two-striped Garter Snake	Associated with semi-permanent and permanent bodies of water in a variety of habitats; requires a relatively dense riparian border	CSC, Protected			Not specifically mapped, but likely occurs where Riparian Scrub persists within the Planning Area.	NC, NY, BAD
Birds							
Accipiter cooperii	Cooper's Hawk	Oak, riparian deciduous or other woodland habitats usually near water	CSC (nesting)		Covered	May utilize native and non-native woodlands, where appropriate prey base exists. Are known from Box Springs Regional Park area, March AFB, Lake Perris, Badlands, and the San Jacinto Wildlife Preserve/Mystic Lake area, but not in dense concentrations (Dudek 2003b).	BSRP, NC, NY, BAD, SJWP, LP, C
Accipiter striatus	Sharp-shinned Hawk	Mixed woodlands near open areas, prefers but not restricted to riparian habitats	CSC (nesting)		Covered	Winter visitor reported from Lake Perris SRA, San Jacinto Wildlife Preserve/Mystic Lake area, the Badlands, and Box Springs (Dudek 2003b). Not a breeding species in the Planning Area.	BSRP, NC, NY, BAD, SJWP, LP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Ardea alba	Great Egret	Marshes, open water (fresh, brackish or salt), and riparian habitats	SA (rookery)			May forage within riparian areas or along the edges of open water, natural or human-constructed. Also expected to forage in agricultural areas (Field/Cropland).	NC, NY, BAD, SJWP, LP, AFB, C
Agelaius tricolor	Tricolored Blackbird	Feeds in grasslands and croplands, breeds near freshwater, preferably in marshes or other emergent wetlands	FSC/ CSC (nesting)		Covered	Historically, a breeding colony occurred at San Jacinto Wildlife Preserve. They have also bee reported from the Badlands. San Jacinto Wildlife Preserve/Mystic Lake area is a core area (Dudek 2003b).	NY, BAD, SJWP
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparrow	Rocky hillsides supporting sparse, low scrub or chaparral, sometimes mixed with grasses	CSC		Covered	Concentrations occur in Box Springs Mountains and the Badlands (Dudek 2003b).	BSRP, NY, BAD, LP
Amphispiza belli belli	Bell's Sage Sparrow	Relatively open chaparral (*e.g.* Chamise Chaparral) and sage scrub; Non-fragmented, contiguous areas on relatively flat terrain appear to be preferred	FSC/ CSC		Covered	Broad but sparse distribution within appropriate chaparral and sage scrub habitats. Box Springs Regional Park, Lake Perris and Badlands are considered core areas.	BSRP, NY, BAD, LP,
Aquila chrysaetos	Golden Eagle	Nests in cliffs (or trees), found in generally mountainous or hilly terrain; forages in grasslands, deserts, and shrubby habitats	CSC, Protected		Covered	Potentially present in small numbers throughout the Planning Area. May have nested in Box Springs Mtns. Badlands and Lake Perris areas receive more use (Dudek 2003b).	BSRP, NC, NY, BAD, LP, SJWP
Ardea herodias	Great Blue Heron	Rookerys located in tall trees near water. Foraging typically occurs along shorelines, marshes and riparian areas, but may include use of open grasslands and agricultural areas.	SA (rookery)		Covered	Not known to nest within the Planning Area, but expected to forage in wetlands and grasslands or agricultural lands.	NC, NY, BAD, SJWP, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Asio flammeus	Short-eared Owl	Located in open areas with few trees such as annual and perennial grasslands, dunes, irrigated lands, and fresh and saltwater wetlands in low elevations	CSC (nesting)			May forage in Field/Croplands, grasslands, and marsh areas. Not recorded as breeding within the Planning Area.	NC, NY, BAD, SJWP, LP, AFB, C
Athene cunicularia	Burrowing Owl	Occurs in open dry grasslands, agricultural, rangelands and desert habitats. Inhabit grass, forb and shrub stages of pinyon and ponderosa pine habitats as well as airports, golf courses, and vacant urban lots.	FCS/ CSC		Covered	Species has been identified in the Badlands, San Jacinto Wildlife Preserve/Mystic Lake/Lake Perris area, and the March Air Force Base (Dudek 2003b). Lake Perris and Mystic Lake may be core areas.	NY, BAD, LP, SJWP, AFB, C
Botaurus lentiginosus	American Bittern	Found in freshwater marsh and vegetated borders of open water. Typically associated with freshwater.	FSC			May breed at San Jacinto Wildlife Preserve/Mystic Lake.	SJWP
Buteo regalis	Ferruginous Hawk	Dry, open habitats, typically grasslands	FSC/ CSC		Covered	Known to use the Badlands for wintering.	NY, BAD
Buteo swainsoni	Swainson's Hawk	Open desert, grasslands or cropland containing scattered, large trees or small groves.	FCS/ST		Covered	Recorded at Box Springs Mountain and the Badlands, may occur in low numbers during migration where perching and foraging habitat persist. Not a breeding species within the Planning Area.	BSRP, NC, NY, BAD, C
Campylorhynchus brunneicapillus	Cactus Wren	Cactus thickets in areas dominated by California sagebrush and Flat-top Buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*). *N*ests in tall Cholla (*Opuntia prolifera*) and Prickly-pear.	CSC		Covered	It also occurs from the City of Riverside east to the Box Springs Mountains and into the Badlands and is known from the Lake Perris area (Dudek 2003b). Core Areas include the Badlands, Box Springs Mountains, and the Lake Perris area, which appear to be remaining strongholds for low to moderate numbers of the cactus wrens in	BSRP, NC, NY, BAD, LP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
						western Riverside county (Dudek 2003b).	
Cathartes aura	Turkey Vulture	Open habitats with protected large trees, snags, rock outcrops, or cliffs for nesting	None		Covered	Not known to breed within the Planning Area but expected to forage in appropriate habitats throughout.	BSRP, NY, BAD, SJWP, LP, AFB
Carduelis lawrencei	Lawrence's Goldfinch	May utilize a variety of habitats, but most strongly associated with riparian areas.	FSC/SA (nesting)			Not addressed by MSHCP, but may occur within appropriate habitats.	NC, NY, BAD,
Chaetura vauxi	Vaux's Swift	Forages over open water or habitat edges.	FSC/ CSC (nesting)			Not addressed by MSHCP, but may occur within appropriate habitats. Only expected as a winter visitor or migrant.	BSRP, NY, BAD, SJWP, LP, AFB
Charadrius alexandrinus nivosus	Western Snowy Plover	Sandy ocean beaches, drying margins of lagoons, tidal mudflats, playas, and small pond levees.	FT/CSC (nesting)			Not expected as a breeding species in the MSHCP area, but may occasionally utilize alkali playa habitats in association with the San Jacinto Wildlife Preserve/Mystic Lake area.	SJWP
Charadrius montanus	Mountain Plover	Fields of bare, plowed dirt.	FPT/ CSC		Covered	Winter visitor and/or migrant plovers are expected within Field/Croplands and Alkali Playa.	NC, NY, SJWP, LP, AFB, C
Chondestes grammacus	Lark Sparrow	Fields and grasslands with scattered trees and shrubs and woodland-grassland edge	FSC/SA (nesting)			Not addressed by MSHCP, but may occur within appropriate habitats.	BSRP, NC, NY, BAD, SJWP, LP, AFB, C
Circus cyaneus	Northern Harrier	Occurs in grassland, agricultural fields, fresh and saltwater mashes and desert sinks	CSC (nesting)		Covered	Locations include San Jacinto Wildlife Preserve/Mystic Lake area. It may be present in higher numbers as a winter visitor throughout open habitats.	NC, NY, BAD, SJWP, LP, AFB, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Dendroica petechia	Yellow Warbler	Riparian woodlands, especially of willows	CSC (nesting)		Covered	Limited potential for occurrence in the Planning Area due to the lack of riparian woodlands, but may occur within well developed riparian scrub and has been noted at Lake Perris/Mystic Lake (Dudek 2003b).	NC, NY, BAD, LP
Egretta thula	Snowy Egret	Marshes, open water (fresh, brackish or salt), and riparian habitats	SA (rookery)			Not addressed in the MSHCP, but may occur within riparian habitats, along the edges of open water, or, to a lesser degree in Field/Croplands	BSRP, NC, NY, BAD, SJWP, LP, AFB, C
Elanus leucurus	White-tailed Kite	Grasslands, agricultural fields, and open habitats with areas of dense deciduous trees for nesting	FSC/SA, Protected (nesting)		Covered	The Lake Perris/Mystic Lake area is considered a core area (Dudek 2003b). The species may occur as a resident and/or winter visitor throughout the Planning Area.	BSRP, NC, NY, BAD, SJWP, LP, AFB, C
Empidonax difficilis	Pacific-slope Flycatcher	Riaprian woodland, some oak woodlands.	FSC/SA			Expected within suitable woodland habitats throughout the Planning Area.	BSRP, NY, BAD
Empidonax traillii extimus	Southwestern Willow Flycatcher	Riparian woodland	FE/SA (nesting)		Covered	Recorded from Box Springs Mountains and Lake Perris, but is unlikely to occur within the Planning Area as a breeder due to the lack of mature riparian forest.	NY, BAD
Eremophila alpestris	Horned Lark	Grasslands, disturbed areas and open habitats with sparse, low vegetation	CSC		Covered	This species is concentrated in Moreno Valley and San Jacinto Wildlife Preserve/Mystic Lake, then more sparsely distributed in the Badlands (Dudek 2003b).	NC, NY, BAD, SJWP, LP, AFB, C
Falco columbarius	Merlin	Located around agricultural fields, grasslands, and mudflats. Winter visitor to the San Diego County area	CSC		Covered	A rare winter visitor only, this species has been observed at the San Jacinto Wildlife Preserve/Mystic Lake area (Dudek 2003b).	SJWP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Falco mexicanus	Prairie Falcon	Open grassland, agricultural fields and desert scrub	CSC (nesting)		Covered	Numerous records from San Jacinto Wildlife Preserve/Mystic Lake area. Less frequent records from the Badlands and Moreno Valley.	NC, NY, BAD, SJWP, LP, AFB, C
Falco peregrinus anatum	American Peregrine Falcon	Most frequent along or near coast around mudflats, shores or ponds	Delisted FSC/SE, Protected (nesting)		Covered	Recorded at San Jacinto Wildlife Preserve/Mystic Lake area (Dudek 2003b). Not known or expected to breed in the area.	SJWP
Haliaeetus leucocephalus	Bald Eagle	Occurs in association with large water bodies, nesting and perching in large snags or trees or on cliffs. In southern California, they are typically migrants or winter residents at large inland water bodies.	FT/SE		Covered	Not known from the Planning Area, but may occasionally utilize open water areas for opportunistic foraging during migration.	SJWP
Icteria virens	Yellow-breasted Chat	Riparian woodland/scrub with dense undergrowth	CSC (nesting)		Covered	Potentially present in Riparian Scrub, where it persists in the Planning Area. Core areas include the San Jacinto River, to the south of the Planning Area.	NC, NY, BAD
Ixobrychus exilis hesperis	Western Least Bittern	Large brackish and freshwater marshes	CSC (nesting)			Potentially present within marsh habitat in the southeastern portion of the Planning Area	SJWP
Lanius ludovicianus	Loggerhead Shrike	Found within grassland or open habitats with bare ground and sparse shrub and/or tree cover for nesting and perching	FSC/ CSC (nesting)		Covered	Both the Badlands and Moreno Valley are considered core areas.	NC, NY, BAD, SJWP, LP, C
Larus californicus	California Gull	Occurs in open ocean, beaches, bays, estuaries, lagoons, as well as garbage dumps, agricultural fields, and freshwater ponds and lakes	CSC (nesting)			May occur in the Planning Area where opportunistic foraging prospects exists and/or at open water. Not known or expected to breed in the area.	SJWP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

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Nycticorax nycticorax	Black-crowned Night Heron	Forage in open water habitats (fresh, brackish, and salt) and occasionally in agricultural areas. Nest in trees, riparian or otherwise or in marshes.	SA (rookery)			Formerly bred in the San Jacinto Wildlife Preserve/Mystic Lake area.	SJWP
Pandion haliaetus	Osprey	Coasts and inland waters	CSC (nesting)		Covered	May occasionally visit San Jacinto Wildlife Preserve/Mystic Lake and Lake Perris. Breeding locations are neither known nor expected.	SJWP
Phalacrocorax auritus	Double-crested Cormorant	Coasts and inland waters with appropriate loafing and roosting sites. Nest on ledges, trees, or rugged slopes	CSC		Covered	Known from San Jacinto Wildlife Area.	SJWP
Plegadis chihi	White-faced Ibis	Freshwater ponds, rivers, irrigated fields and brackish lagoons	FSC/ CSC		Covered	Formerly bred at San Jacinto Wildlife Preserve/Mystic Lake area and is still sighted there, as well as in Moreno Valley.	SJWP
Polioptila californica	California Gnatcatcher	Various successional stages of sage scrub	FT/CSC		Covered	Although the Badlands are known to support this species, it is not considered a key population.	NY, BAD
Selasphorus rufus	Rufous Hummingbird	Sage scrub, chaparral, orchards, and exotic planting/landscape areas	SA (nesting)			Expected within appropriate habitats throughout the Planning Area	BSRP, NC, NY, BAD, LP, C
Selasphorus sasin	Allen's Hummingbird	Sage scrub, chaparral, orchards, and exotic planting/landscape areas	FSC/SA (nesting)			Expected within appropriate habitats throughout the Planning Area	BSRP, NC, NY, BAD, LP, C
Spizella atrogularis	Black-chinned Sparrow	Chaparral and sage scrub-chaparral mixed habitats, may be excluded from smaller fragments	SA (nesting)			Expected in large blocks of chaparral or chaparral-sage scrub areas on the periphery of the project area.	BSRP, NY, BAD, LP
Toxostoma redivivum	California Thrasher	Sage scrub or chaparral	FSC/SA (nesting)			May occur throughout chaparral and sage scrub habitats on the periphery of the Planning Area and/or near Moreno Beach Drive.	BSRP, NC, NY, BAD, LP, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

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Vireo bellii pusillus	Least Bell's Vireo	Moist woodlands, typically early successional riparian habitat (details in report text)	FE/SE (nesting)		Covered	Species not reported as nesting extensively within the Planning Area, but is known from March AFB and may occur in appropriate riparian scrub habitats elsewhere.	NY, BAD, AFB
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	Occurs in riparian and marsh habitats, also forages in agricultural lands	SA (nesting)			May occur within riparian scrub, marsh, or Fields/Croplands within the Planning Area.	NC, NY, BAD, SJWP
Mammals							
Antrozous pallidus	Pallid Bat	Utilizes open forest and grassland habitats for feeding and multiple habitats for roosting	CSC			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP, NC, NY, BAD, LP
Bassariscus astutus	Ringtail	Chaparral or forested habitat in close association with rock outcrops and riparian habitat	Protected			Expected where large tracts of unfragmented chaparral habitats persist, particularly within the Badlands.	BSRP, NY, BAD,
Chaetodipus californicus femoralis	California Pocket Mouse	Found in areas of fine sandy ground, (Chaparral/Coastal Sage Scrub)	CSC			Not addressed by the MSHCP, may occur within sage scrub and/or chaparral with appropriate substrate, particularly.	BSRP, NC, NY, BAD
Chaetodipus fallax fallax	Northwestern San Diego Pocket Mouse	Found in Coastal sage scrub	CSC		Covered	Sage scrub, grasslands, and chaparral throughout the Planning Area are considered to support key populations. The species is most likely to occur within the unfragmented habitats on the periphery of the project area.	BSRP, NY, BAD, SJWP, LP,
Corynorhinus townsendii	Townsend's Big-eared Bat	Cave rooster, feeds in forest/woodland habitats or along habitat edges within 15 km of roost site	FSC/ CSC			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Dipodomys merriami parvus	San Bernardino Kangaroo Rat	Riversidean Sage Scrub close to washes and alluvial areas, Riversidean Alluvial Fan Sage Scrub that is characterized by sparse vegetative cover and sandy, loose soils for the species' fossorial lifestyle	FE/CSC		Covered	Known (in some cases historically) from Reche Canyon, Moreno Valley, March AFB, San Jacinto Wildlife Preserve/Lake Perris, but these populations may not currently exist. There are no key populations mapped within the Planning Area.	NY, BAD, AFB,
Dipodomys stephensi	Stephens' Kangaroo Rat	Areas of sparse vegetation primarily grasslands, but may occur in sage scrub or disturbed areas	FE/ST		Covered	Key MSHCP populations occur at San Jacinto Wildlife Area-Lake Perris Preserve, Potrero/Badlands area, and Sycamore Canyon-March Air Reserve Base Reserve.	BSRP, NC, NY, BAD, SJWP, LP, AFB, C
Eumops perotis californicus	Greater Western Mastiff Bat /California Mastiff Bat	Extensive open areas with abundant roost locations in rock outcrops, (found where oaks and chaparral occur)	FSC/ CSC			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP, NC, NY, BAD, LP
Lepus californicus bennettii	San Diego Black-tailed Jackrabbit	Relatively open chaparral and sage scrub and grasslands	CSC		Covered	Throughout Planning Area where grassland, sage scrub and chaparral persist. May also be present within agricultural areas (Field/Croplands). The Badlands are probably a key area for this species (Dudek 2003b).	BSRP, NC, NY, BAD, C
Myotis ciliolabrum	Western Small-footed Myotis	Uses a variety of habitats, prefers open stands in forests/woodlands, brushy habitats, and riparian areas	FSC/SA			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP, NC, NY, BAD, LP
Myotis evotis	Long-eared Myotis	Uses multiple habitats for roosting (mainly crevices), forages in oak/coniferous forests, may require water	FSC/SA			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP
Myotis thysanodes	Fringed Myotis	Uses multiple habitats for roosting (mainly crevices), primarily feeds in (coniferous) forests	FSC/SA			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Myotis volans	Long-legged Myotis	Uses multiple habitats for roosting (mainly crevices), primarily feeds in (coniferous) forests	FSC/SA			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP
Myotis yumanensis	Yuma Myotis	Utilizes multiple habitats (primarily woodlands and forests) but forages over water	FSC/SA			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP
Neotoma lepida intermedia	San Diego Desert Woodrat	Chaparral and to a lesser degree chaparral, particularly abundant in areas of rock outcrops	CSC		Covered	Known from the Badlands and San Jacinto Wildlife Preserve/Lake Perris area. Likely also occurs where suitable habitat exists throughout the remainder of the Planning Area.	BSRP, NC, NY, BAD, LP
Nyctinomops femorosaccus	Pocketed Free-tailed Bat	Cliff rooster, feeds in multiple habitats	CSC			Not addressed by the MSHCP, potentially present within suitable habitat in the Planning Area.	BSRP, NC, NY, BAD, LP
Onychomys torridus ramona	Southern Grasshopper Mouse	Variety of habitats, including grasslands, sage scrub and chaparral, where friable soils occur	FSC/ CSC			Potentially present throughout much of the Planning Area periphery lands, recorded from the Box Springs, March AFB, and Badlands areas.	BSRP, NC, NY, BAD, AFB
Perognathus longimembris brevinasus	Los Angeles Little Pocket Mouse	Found in areas of fine sandy ground, (Coastal Sage Scrub)	CSC		Covered	The Badlands, San Jacinto Wildlife Preserve, Lake Perris SRA, March AFB, and Moreno Valley are all considered key population areas (Dudek 2003b). Specific, recorded occurrences include San Jacinto Wildlife Preserve and adjacent to Alessandro Avenue (Dudek 2003b).	NY, BAD, SJWP, LP, AFB, C

TABLE 5.9-5
RARE, THREATENED, ENDANGERED, ENDEMIC, AND/OR SENSITIVE SPECIES KNOWN FROM OR WITH A POTENTIAL TO OCCUR IN THE PLANNING AREA
(continued)

Scientific Name	Common Name	Suitable Habitat Description	Federal/ State (CDFG) Status[1]	CNPS Status	MSHCP Status[2]	Status within Planning Area	Known and/or Expected Occurrence by Sections[3]
Puma concolor	Mountain Lion	Chaparral or woodland habitats with requisite areas of riparian vegetation and interspersions of rock outcrops and irregular terrain where deer are present	Protected		Covered	May occur on the periphery of the Planning Area where larger tracts of native scrub and chaparral habitats connect to off-site key populations areas in the surrounding mountains and foothills.	BSRP, NC, NY, BAD
Taxidea taxus	American Badger	Grasslands and open scrub habitats	SA			Expected in areas with substantial grasslands. Badlands population may be of critical importance.	NC, NY, BAD, SJWP, LP

[1] Sensitivity Status: FE = Federally Endangered, FT = Federally Threatened, FSC = Federal Species of Concern, SE = State (California) Endangered, ST = State Threatened, CSC = California Species of Special Concern, SA = Special Animal, (rookery) or (nesting) = CNDDB tracks only nesting locations, Protected = Department of Fish and Game "Protected" per Sections 3511, 4700, 500 and/or 5515 of the Fish and Game Code, NE = MSHCP Narrow Endemic Plant Species

[2] In accordance with the MSHCP Implementing Agreement, "Covered" species that are not listed as "Covered Species Adequately Conserved"

[3] Planning Area Report Sections: BSRP = Box Springs Regional Park, NC = North- Central, NY = Norton Younglove, C = Central, BAD = Gilman Springs Road-Badlands, SJWP = San Jacinto Wildlife Preserve-Mystic Lake, LP = Lake Perris SRA, and AFB = East March AFB

Although the Grasshopper Sparrow was addressed as a sensitive species in the previous version of this biological report (and is an MSHCP covered species), it has since been removed from the CDFG Special Animals list and has correspondingly been removed from the report's sensitive species analysis. In contrast, Lark Sparrow, Allen's Hummingbird, and California Thrasher were not previously addressed as sensitive species. Since completion of the first report iteration, these species have been listed by USFWS and/or CDFG as sensitive and are, thus, addressed herein.

THRESHOLDS FOR DETERMINING SIGNIFICANCE

For the purposes of this EIR, a significant impact would occur if implementation of General Plan Alternatives 1, 2, or 3 would:

- *Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish and 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.*

- *Have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.*

- *Have possible environmental effects which are individually limited but cumulatively considerable.*

It is important to note that the significance of a given activity is variable according to the environmental setting.

Direct and Indirect Impact Definitions

The 2005 CEQA guidelines define a "direct impact or primary effect" as "effects which are caused by the project and occur at the same time and place" that can produce a physical change in the environment. CEQA guidelines define an "indirect impact or secondary effect" as "effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable" physical change in the environment (California Resources Agency 2005, δ15358).

ENVIRONMENTAL IMPACTS

The City of Moreno Valley is considering three potential land use alternatives for the General Plan (for a detailed discussion of each alternative, refer to Section 3.0 Project Description of this EIR). **Figures 3-2**, **3-3**, and **3-4**, located in Section 3.0 Project Description, depict the three proposed land use maps. The biological resources impact analysis in this section is based on the change between existing conditions and those projected for the expected development scenario at buildout. Where a land use designation is proposed that differs from existing conditions (on the ground), the potential for indirect (future) impacts has been assessed assuming that the area is fully developed as allowed by the proposed General Plan land use designation.

For the purposes of this analysis, potential biological impacts are being discussed according to the eight designated sections within the planning area. The following text

provides a qualitative (and where feasible a quantitative) impact analysis, based on the potential for direct, indirect, and cumulative impacts to existing biological conditions under the proposed planning actions, as well as a determination of biological significance for each potential impact per CEQA and the MSHCP.

Impact Analysis Assumptions

The following assumptions are used in the impact analysis:

- Any area with a proposed designation of Residential (except Hillside or Rural Residential), Office, Mixed Use, Commercial, or Business Park was considered to be impacted throughout the area, with a potential for the future complete loss of all biological resources not protected under existing regulations. Areas proposed for Hillside Residential or Rural Residential designations are expected to leave a portion of the area in a natural state due to steep slope development restrictions. Areas within the Badlands and Box Springs Regional Park are dominated by steep slopes. Development within these areas would be required to maintain 35 to 60% open space, per the City's Residential Site Development Standards.

- Areas adjacent to any Residential, Office, Mixed Use, Commercial, or Business Park designation are assumed to experience potential development-associated impacts due to increased noise, lighting, traffic, increased percentage of non-permeable surface area, and, in the case of potential residential development, the introduction of domestic animals.

- Existing State and Federal regulations are assumed to provide protection against habitat loss impacts for all jurisdictional wetlands and Non-wetland Waters of the U.S./Streambeds. It is assumed that any potential impacts assessed would be mitigated to a level below significance through compliance with the state and federal statues regulating these resources (see mitigation measures later in this section). However, wetland buffer areas may not be afforded adequate protection under existing regulations; thus, jurisdictional areas may be subject to indirect impacts resulting from increased lighting and noise, increased edge effects, and the introduction of non-native species.

- Riparian associated species are generally assumed to receive protection from habitat loss impacts due to the above regulations, but not from indirect impacts such as increased lighting and noise, increased edge effects, the introduction of non-native species, and any increase in domestic animals.

- Species listed as federally threatened or endangered receive protection under the federal ESA and species listed by the state as threatened or endangered receive protection under CESA. It is assumed that any potential impacts assessed would be mitigated to a level below significance through compliance with the state and federal statues regulating these listed species.

Adoption of this General Plan EIR would not result in significant direct impacts to existing biological resources; however, adoption of the General Plan would lead to future (indirect) impacts through approval of development projects. Therefore, this section identifies potential future impacts that could occur through increased future development, and these impacts are cited as potential "indirect impacts." Planning actions ultimately resulting in quantifiable direct impacts to biological resources would be addressed subsequently through analysis at a lower tier, project-specific level of environmental review. As identified later in this section, implementation of the recommended mitigation measures would provide for completion of further environmental review at the project-specific level to minimize the risk of unmitigated impacts being authorized through adoption of this General Plan EIR.

Indirect impacts that may occur as a result of project implementation vary according to future proposed development. The most obvious potential indirect biological impact is wildlife habitat loss. In addition to potential habitat loss, impacts may occur within remaining habitats due to development-associated effects (referred to herein as "collateral indirect impacts") that diminish wildlife habitat quality. Wherever increased development would be allowed, the following collateral indirect impacts are possible:

- Wildlife disturbance caused by the presence of humans, pets (Crooks 1998, Crooks *et al.* 2000, and Hawkins *et al*. 1999), and vehicles within and adjacent to directly impacted areas;
- Artificial lighting that alters nocturnal wildlife activity (Buchanan 1993 and Rydell and Baagoe 1996), artificially increases depredation rates on vulnerable species (Frank 1988), and/or disrupts circadian rhythms (Upgren 1996);
- Alterations in natural moisture regimes caused by turf and landscape irrigation and the placement of impermeable (paved) surfaces;
- Increased urban runoff, especially that containing herbicides, fungicides, pesticides, and fertilizers required to maintain turf and landscaping; and
- Increased habitat fragmentation with a potential corresponding decrease in species diversity and abundance (Crooks 1999, Crooks and Soule 2000, and Giusti and Tinnin 1993).

Potential Vegetation Community Indirect Impacts

Proposed planning actions could result in the permanent loss of habitat by allowing future development to occur. In addition, proposed planning actions have the potential to produce deleterious collateral indirect impacts that could adversely modify the composition and value of wildlife habitat adjacent to development areas. **Table 5.9-6** summarizes the potential indirect impacts to vegetation communities within the planning area, by planning area section, in an unquantified manner. Tables, which identify existing land use by section and proposed land use by section and alternative, can be found in Appendix E Volume II of this EIR.

TABLE 5.9-6
POTENTIAL INDIRECT IMPACTS TO VEGETATION COMMUNITIES WITHIN THE PLANNING AREA

	Residential/Urban/Exotic and Diary/Livestock	Field/Croplands	Orchards/Groves	Riversidean Coastal Sage Scrub	Non-native Grasslands	Chaparral (only significant if part of a corridor)	Alkali Playa, Riparian Scrub, and Marsh	Disturbed Alluvium and Riversidean Alluvial Fan Sage Scrub	Corridor associated habitat impacts
Box Springs Regional Park Section				X	X	X			X
North-Central Section		X		X	X		X		X
Norton Younglove Section		X		X	X	X	X		X
Gilman Springs Road-Badlands Section				X	X	X	X	X	X
San Jacinto Wildlife Area-Mystic Lake Section		X							
Lake Perris SRA Section		X			X			X	
East March AFB Section		X			X				
Central Section		X		X	X		X		X

The following discussion identifies the general impacts for each alternative occurring within each of the eight geographic sections shown on **Figure 5.9-1**. More specific discussion of impacts and mitigation measures is provided under *Significance of Vegetation Community Impacts and Mitigation* located later in this section.

Box Springs Regional Park Section

Alternative 1

Land Use Policy Map Alternative 1 proposes changes within the Box Springs Regional Park and along the northern edge of this section from the existing condition. These areas support significant tracts of native habitat and provide connectivity with extensive open space outside of the planning area. Under Alternative 1, the land use designation for Box Springs Mountain Park would be entirely Hillside Residential. The Hillside Residential development requirements ensure that a substantial percentage of the area would remain in a natural state. In contrast, the existing use for this area (on the ground) is predominantly Open Space with a small area of Residential. The designation of Box Springs Mountain Park as Hillside Residential could result in the fragmentation of some of the most extensive tracts of Riversidean Sage Scrub and Chaparral remaining within the planning area. It could also result in a substantial loss of Non-native Grassland. The

ultimate potential result would be the degradation in the value of this area for use by wildlife species not adapted to urban environments.

Along the northern boundary of this section, areas currently occupied by Vacant Land and Residential would be designated as Residential (R2, R3, and R10), Hillside Residential, Commercial, Public, and Open Space. These northern areas currently support Non-native Grasslands, Chaparral, sage scrub, woodlands, open water, and existing Residential development. These proposed land use designations could result in a loss of the native vegetation communities and corresponding loss of resident species. In particular, there would be potential for impacts to several areas of Non-native Grasslands that occupy over 100 acres each and border sage scrub habitats. Although two relatively large grassland areas are proposed for designation as Open Space, (same as existing conditions) these areas are isolated by residential development and have reduced biological value. The areas proposed for Open Space designation within this section occur primarily in the northern portions, within a matrix of proposed Residential areas.

Under Alternative 1, lands now Vacant or mapped as Open Space provide a measure of connectivity from the Box Springs Mountain Park eastward toward the Badlands. More extensive native habitats occur north of the planning area but within Moreno Valley this northern strip of largely undeveloped land provides connectivity in an otherwise developed landscape. Alternative 1 would allow for residential development throughout much of this area. The density of this development would be variable, based on multiple classes of the Residential designation, but regardless of density, connectivity could be severed through habitat impacts (see the Wildlife Corridor Impacts discussion later in this section).

Alternative 2 and Alternative 3

In this section, Alternative 2 differs from Alternative 1 in the proposed designations within Box Springs Regional Park. Alternative 2 designates a larger portion of the park, primarily to the northwest and southeast, as Open Space and the remainder as Hillside Residential. While biologically superior to Alternative 1, Alternative 2 could still result in the degradation of large areas of native or semi-native habitats. The connectivity would be improved under these Alternatives (2 and 3), when compared with Alternative 1, simply due to the presence of some remaining potential open space, but is not comparable to existing conditions.

Proposed land use designations under Alternative 3 do not differ from those under Alternative 2 for this section; therefore, the potential impact analysis is the same as that presented for Alternative 2.

North-Central Section

Alternative 1

Under this alternative, the North-Central Section would be subject to the potential conversion of existing Vacant land, Agricultural lands (Field/Croplands), Orchards/Groves, and Non-native Woodlands to Residential and limited Commercial development with an area of Open Space in the annexed parcel. Areas that currently support native or semi-native vegetation that would be subject to potential Residential development include Riversidean Sage Scrub, Chaparral, and Non-native Grassland communities along the northern project edge. The potential loss of Field/Croplands and Orchards/Groves would occur in the central and eastern part of the section.

In the southern part of this section, an area mapped as Vacant on the Existing Land Use Map, which supports Non-native Grassland, is proposed for designation as Open Space. Another area proposed for Open Space designation is the Non-native Grassland, Riversidean Sage Scrub, and Chaparral along the northeastern border of Perris Blvd. However, these areas would be surrounded by Residential and Commercial designations potentially resulting in isolation of the proposed Open Space.

Additionally, scattered, small patches of Riparian Scrub in this section may be subject to increased indirect impacts associated with potential development. Existing regulations require mitigation that reduce these impacts to a level less than significant.

Alternative 2 and Alternative 3

When compared with Alternative 1, Alternative 2 allows for less Commercial use and increased Office use within this section and maintains an area of Open Space in the northeastern corner. Since this Open Space is mapped as such under the existing land use, it would reflect no change from existing conditions. The substitution of Office designations for Residential or Commercial would not affect the potential for habitat loss or increase potential for indirect impacts.

Alternative 3 replaces the Office and Commercial designations on the Existing Land Use Map along State Route 60 with Residential use. This is not expected to result in a different potential habitat loss impact, but the increase in potential Residential use could have a corresponding increase in indirect impact to any remaining adjacent areas of native habitat from human intrusion and domestic animal impacts.

Norton Younglove Section

Alternative 1

Based on the Existing Land Use Map, this section is currently occupied almost entirely by Vacant land with the exception of some relatively small areas of Residential

development. Under Alternative 1, the area would be designated as Rural Residential and Residential (R1) with two small areas called out for Commercial use along State Route 60.

The designations proposed under Alternative 1 could result in the loss or fragmentation of existing large contiguous tracks of Riversidean Sage Scrub, Chaparral, and Non-native Grasslands. There could also be a loss of Field/Cropland through conversion to housing. The overall potential result would be a loss of native habitats and reduction of wildlife use for non-urban-tolerant species. However, portions of these areas are expected to be maintained in a natural state due to restrictions on development of steep slope areas.

Riparian Scrub found in the western portion of this section could experience impacts; however, existing U.S. Army Corps of Engineers regulations pursuant to the federal Clean Water Act and California Department of Fish and Game regulations pursuant to the Fish and Game Code will afford some protection to any Wetlands or Non-wetland Waters of the U.S./Streambeds.

The Riversidean Sage Scrub and Chaparral of this section also provide connectivity between extensive native habitats to the northwest and similar habitats to the southeast in the Badlands. Severance of this connection could impact wildlife diversity and abundance throughout the immediate region (see the discussion of Wildlife Corridor Impacts later in this section).

Alternative 2 and Alternative 3

Alternative 2 reduces the amount of Commercial designation and replaces it with Residential and Office. This change would not alter the habitat loss potential from that determined under Alternative 1, but it could increase other indirect impacts including habitat fragmentation from human intrusion and introduction of non-native meso-predators.

Alternative 3 designates the entire section as Residential and has the same potential for impacts through future habitat loss as the previous alternatives, but even greater potential for indirect impacts associated with Residential development.

Gilman Springs Road-Badlands Section

Alternative 1

Under existing conditions, this section is almost entirely Vacant land, with the exception of an Open Space area adjacent to Gilman Springs Road and Jack Rabbit Trail, and scattered areas of residential development. In terms of biological resources, this area supports Riversidean Sage Scrub, Chaparral, Non-native Grasslands that continue off-site to the east, as well as, Riversidean Alluvial Fan Scrub and Riparian Scrub.

Alternative 1 proposes designation of this section almost entirely as Residential and Commercial. A small area consisting of approximately 17 acres on the northwestern edge is slated for Open Space designation. The potential for impacts exists throughout the section with a corresponding loss of resident species, faunal and floral diversity and abundance, raptor wintering and foraging habitat, and sensitive species habitat.

Riparian Scrub found in this section could experience impacts; however, existing U.S. Army Corps of Engineers regulations pursuant to the federal Clean Water Act and California Department of Fish and Game regulations pursuant to the California Fish and Game Code will afford protection against significant, unmitigated impacts to Wetlands or Non-wetland Waters of the U.S./Streambeds.

Alternative 2 and Alternative 3

These alternatives would not differ from Alternative 1 with regard to potential for biological impacts within this section.

San Jacinto Wildlife Area-Mystic Lake Section

Alternative 1

The lands within this section are currently mapped as Vacant, Agriculture, and Public, while lands within this section qualify as 100-year Floodplain that is not a distinction on the Existing Land Use map. Under the proposed Alternative 1, the land in the southwest would be under the Floodplain designation, with the exception of a Commercial area along Gilman Springs Road. North and east of the San Jacinto Wildlife Area the proposed designations include Open Space, Public, and Residential, including the Rural Residential designation in the Badlands east of Gilman Springs Road. A large percentage of the Rural Residential designation is expected to be maintained in a natural state due to restrictions on development of steeply sloping areas.

It is important to note that 1,000 acres of the area designated as Open Space, Public and Residential situated south of the prolongation of Cactus Avenue, also known as Gato del Sol Avenue, was purchased by the State of California for expansion of the San Jacinto Wildlife Area. Given that the State intends to manage the area for wildlife conservation purposes, it is unlikely that there will be adverse biological impacts in this area. However, property at the southeast and southwest corners of Gato del Sol Avenue and Virginia Street, on the east side of Davis Road and the east side of Gilman Springs Road, was not included in the State purchase.

The majority of the San Jacinto Wildlife Area-Mystic Lake Section is within the San Jacinto Wildlife Area.

This area is almost entirely occupied by Alkali Playa and Field/Croplands with areas of open water. While virtually all of the Alkali Playa lies within the proposed Floodplain

designation, portions of the Field/Cropland would be designated as Residential or Commercial. According to the City of Moreno Valley Draft General Plan Goals, Objectives, Policies and Programs, "the primary purpose of areas designated Floodplain is to designate floodplain areas where permanent structures for human occupancy are prohibited to protect the public health and safety" (City of Moreno Valley 2001). Since the Floodplain designation prohibits the construction of habitable structures and the majority of the designation is within the San Jacinto Wildlife Area, biological impacts in this area are unlikely.

The overall potential result would be a loss of native habitat and reduction of wildlife use for non-urban-tolerant species, but the impacts would be limited. A large percentage of this geographic section will be maintained in a natural state within the expanded San Jacinto Wildlife Area, the Rural Residential designation and the Floodplain designation.

Alternative 2 and Alternative 3

These alternatives would not differ from Alternative 1 with regard to potential for biological impacts within this section.

Lake Perris State Recreation Area Section

Alternative 1

Under existing conditions, this section is predominantly occupied by Open Space and Vacant land with interspersed small Public and Residential areas. Under Alternative 1, the section's lands would be divided between Open Space, Residential, Commercial, and Public designations. The existing Open Space north of Lake Perris is proposed to remain as Open Space and there would be no expected impacts to the native habitats which make up this area. The area now mapped as Vacant would be divided between Open Space, Residential, Commercial, and Public uses. The proposed designations could result in a loss of Non-native Grassland and Field/Cropland.

The Non-native Grassland loss would occur in the northeastern portion of the site adjacent to the large area of Open Space. Although smaller than other grasslands within the Moreno Valley area, the Non-native Grassland here is substantial and its location adjacent to Open Space native habitats increases its wildlife value. The loss of Field/Croplands would occur in the northwestern corner of the section. Disturbed Alluvium is also located within a potential impact area and may experience increased impacts.

Alternative 2 and Alternative 3

In comparing the three alternatives, the differences consist of a proposed designation of Commercial under Alternative 1 and Residential under Alternatives 2 and 3 in the north central portion of the section. The potential for habitat loss within the section is the same

for each alternative, but the potential for other indirect wildlife impacts increases under Alternatives 2 and 3 due to the area proposed for Residential designation. Residential uses create indirect impacts due to intrusion by humans and domestic animals.

East March AFB Section

Alternative 1

Under Alternative 1, proposed land use designations of Business Park and Residential could result in the loss of over 1,000 acres of Field/Cropland and Non-native Grassland. The areas currently mapped as Vacant or Agriculture lands lie in the southwestern corner of the section. Additional losses of Non-native Grassland and Field/Cropland could occur in the central portion of the section where designations of Commercial and Residential are proposed, but these areas are smaller and are biologically isolated under existing conditions.

Alternative 2 and Alternative 3

There is no biological impact difference between the three alternatives.

Central Section

Alternative 1

In the western half of the Central section most of the biological resources have been eliminated through previous development. However, along the southern boundary, an area of Vacant land (approximately 300 acres) supporting Field/Cropland persists and lies adjacent to Non-native Grassland. Other isolated grasslands proposed for designation as Residential or Office or a combination of the two have less ability to provide significant foraging habitat or to support significant numbers of sensitive species due to their smaller size and isolation under existing conditions.

In the eastern half of this section, the proposed designation of lands as Residential, Commercial, Business Park, and Mixed Use could result in a loss of extensive Vacant and Agriculture lands known to support Field/Croplands, Orchards, Non-native Grassland, Riversidean Sage Scrub, and Chaparral. In particular, the majority of the remaining Riversidean Sage Scrub and Non-native Grassland habitat along Moreno Beach Drive is proposed for Open Space or Hillside Residential. This area is only remnant of historic Riversidean Sage Scrub coverage left in central Moreno Valley.

About 52 acres of habitat on the south side of Moreno Park (northwest corner of Cottonwood Avenue and Moreno Beach Drive) were transferred to the Eastern Municipal Water District. Although the General Plan land use designation is Hillside Residential, other than a small area for water storage tanks, the District is obligated to maintain the property as open space. The transfer to the District was mitigation for biological impacts

associated with the Moreno Valley Field Station Specific Plan (City of Moreno Valley 2004).

Proposed Open Space designations would not provide connectivity to Open Space areas to the south. These proposed Open Space areas could result in the maintenance of some resident species but they are not expected to preserve the diversity and abundance of species found here under current conditions.

Alternative 2 and Alternative 3

Alternatives 2 and 3 land use designations would have the same biological impacts than those discussed under Alternative 1.

Significance of Vegetation Community Impacts and Mitigation

Residential/Urban/Exotic and Dairy/Livestock

Developed areas, such as Residential/Urban/Exotic and Dairy/Livestock, do not contain substantial native vegetation and have little biological value; however, they may provide local travel routes for urban tolerant mammals. Regardless, potential impacts to developed areas within the planning area would not be significant. No mitigation measures are required.

Field/Croplands, Orchards/Groves and Non-native Woodlands

The significance of impacts to these habitats is based upon the wildlife value. Potential impacts to expansive tracts (generally over 100 acres) of Field/Croplands are considered significant due to the importance of the Moreno and San Jacinto Valleys as raptor wintering areas.

Orchards/Groves and Non-native Woodlands are known to provide habitat for sensitive species; however, typically the species found within these areas are low sensitivity and dense populations are not expected. The habitat is considered suitable for a number of species but not high quality. The densities of sensitive species in these areas are not expected to be sufficient to result in significant impacts. No mitigation measures are required.

Riversidean Sage Scrub

There has been a significant loss of this sensitive, native vegetation community throughout southern California. Riversidean Sage Scrub within the center of Moreno Valley was mapped as moderate to low value but the Sage Scrub on the outskirts of Moreno Valley, toward Box Springs and the Badlands, was high to very high quality habitat (KTU+A/PSBS in Dudek 2003b). Impacts to Riversidean Sage Scrub are considered to be individually and cumulatively significant because it supports the

California Gnatcatcher, a federally threatened species, as well as a host of other regionally or locally sensitive species. Implementation of Mitigation Measures identified later in this section will reduce this impact to a level less than significant.

Chaparral

Chaparral remains regionally common throughout most of southern California and is typically not considered sensitive in this region due to its relatively wide distribution and persistence. However, where chaparral is located within a MSHCP core or linkage area (described previously for the planning area), or where it supports federally or state listed, endangered or threatened species, MSHCP narrow endemic species, or a critical population of a sensitivity species it is sensitive and impacts are significant. Thus, impacts to Chaparral within Box Springs Regional Park, or within the Box Springs Regional Park Section, north of Sunnymead Ranch Parkway (MSHCP Subunit 2, Cell Groups I, L, and M) are considered significant, as these areas comprise or contribute to an Existing Core/Non-Contiguous Habitat Block (A) and Proposed Linkage (4), respectively. Impacts to Chaparral within the Norton-Younglove Section (MSHCP Subunit 3, cell group T) is slated to contribute to assembly of the Proposed Core 3, thus impacts to Chaparral within this section would be significant. In the Badlands-Gilman Road Section, impacts to Chaparral south of State Route 60 would be considered significant due to the habitats expected contribution to Proposed Core 3.

Additionally, habitats adjacent to Gilman Springs Road and Jack Rabbit Trail are proposed for designation as Critical Habitat for the San Bernardino Kangaroo Rat. Impacts to Chaparral within this area may be significant. Implementation of Mitigation Measures identified later in this section will reduce this impact to a level less than significant.

Non-native Grasslands

Grasslands are disappearing rapidly in Southern California because they generally occur on relatively flat ground and are easily developed. Non-native Grassland is not typically considered sensitive as a habitat alone; however, it is considered a significant resource for raptor foraging, may support sensitive plant species, and may serve as a habitat linkage. Impacts to substantial grassland areas (generally over 100 acres) known to support wintering raptors are considered significant, particularly where the grasslands abut Open Space or high densities of raptors have been recorded. Implementation of Mitigation Measures identified later in this section will reduce this impact to a level less than significant.

Disturbed Alluvium and Riversidean Alluvial Fan Sage Scrub

Alluvial Fan Scrub occupies broad washes of sandy alluvial drainages that are active with rainfall runoff, but remain relatively dry through the remainder of the year. Due to regional losses, Riversidean Alluvial Fan Scrub is now essentially confined to remnant

patches along unaltered streams and washes (Olson 2001). Although the drainages with which this habitat type is associated would fall under the jurisdictions of the Army Corps of Engineers (ACOE) and California Department of Fish and Game (CDFG), the surrounding vegetation community may not receive adequate protection under these regulations. Impacts to Riversidean Alluvial Fan Sage Scrub may occur within the Gilman Springs Road-Badlands Section. These impacts would be significant due regional losses and wildlife value.

Based on the limited wildlife value of the Disturbed Alluvium community, its disturbed nature, and the biological isolation of the Disturbed Alluvium patch within the planning area, impacts to Disturbed Alluvium are not expected to be significant.

Implementation of Mitigation Measures identified later in this section would reduce the impact associated with Riversidean Alluvial Fan Sage Scrub to a level less than significant.

Alkali Playa, Riparian Scrub, and Marsh

No significant impacts to Alkali Playa habitat would occur because this community is contained within proposed Open Space or Floodplain designation. Wetlands and riparian habitats could be significantly impacted as a result of future development as permitted by the Land Use Alternatives. However, existing federal and state regulations enforce a no net loss policy of these resources, which offer a measure of protection and help ensure that impacts are mitigated sufficiently.

Sensitive Species Potential Impacts and Mitigation

The proposed project has the potential to result in impacts to sensitive flora and fauna species present within the Planning Area. Impacts to federally and state listed, endangered and threatened species listed in **Table 5.9-5** would be significant under CEQA. Impacts to lower sensitivity species that are not presently threatened with extinction would be significant under CEQA if the species exists in such small numbers throughout all or a significant portion of their range that they may become endangered if their habitat environment worsens, or the species are likely to become endangered within the foreseeable future throughout all or a significant portion of their range and may be considered threatened.

Implementation of the Mitigation Measures (identified later in this section) would provide adequate protection of sensitive species impacted by the project.

Sensitive Plant Species Impacts and Mitigation

The Mission Canyon Bluecup occurs in moist or disturbed areas. Impacts to this species may occur where appropriate habitat exists and the project proposes a land use designation other than Open Space or Floodplain. Mission Canyon Bluecup is an

extremely rare plant that may be naturally approaching extinction based on its few historical collections. Some botanists dismiss this plant taxonomically as a form of a variable group. Potential impacts to this species are not anticipated to be significant due to the plant's low sensitivity status and no evidence of significant populations within the planning area.

Impacts to Payson's Jewelflower could occur in the North-Central Section and Norton Younglove Section where Chaparral and sage scrub habitats may be replaced by residential development due to the proposed land use changes. In these sections impacts to Palomar Monkeyflower may also occur where Chaparral is proposed for Residential designation. Impacts in these areas would not conflict with MSHCP conservation strategies for the two covered species and are not anticipated to be significant.

Implementation of any of the three General Plan land use alternatives could result in a significant impact associated with Parry's Spineflower. This species could occur where Chaparral and scrub habitats are designated as Residential in the Box Springs Regional Park Section, North-Central Section, Norton Younglove Section, and Gilman Springs Road-Badlands Section. Implementation of Mitigation Measures identified later in this section would reduce this impact to a level less than significant.

Impacts to core locations of Smooth Tarplant are not anticipated due to designation of the southeastern portion of the project site as Floodplain. However, impacts to the population mapped one mile south of State Route 60 and Dracaea Avenue on the west side of Nason Street could occur, as this area is proposed for designation as Residential. These impacts would not conflict with MSHCP conservation of the species and would not be significant per CEQA.

San Jacinto Valley Crownscale occurs in Alkali Playas, and an MSHCP core location of San Jacinto Valley Crownscale is located along the San Jacinto River from Mystic Lake southwest to the vicinity of Perris (Dudek 2003b). Impacts to this species are not expected under any of the three land use alternatives, due to designation of the southeastern portion of the section as Floodplain. Similarly, impacts to Parish's Brittlescale, Davidson's Saltbush, Thread-leaved Brodiaea, Vernal Barley, Coulter's Goldfields, Spreading Navarretia, and Wright's Trichocoronis (an MSHCP Narrow Endemic Species) are not anticipated.

If Orcutt's Brodiaea, Clay Bindweed (Small-flowered Morning Glory), Palmer's Grapplinghook, and/or Small Flowered Microseris occur in this area, they are expected on clay soils. The following mapped soil types are found in the vicinity of the San Jacinto River floodplain: Willows silty clay, Waukena fine sandy loam, Waukena loam, San Emigdio fine sandy loam, and Chino silt loam. These species may occur within the silty clay soils. Since this area is proposed for designation as Floodplain, impacts are not expected to these species. Similarly, if Great Valley Phacelia or Parish's Bush Mallow occur in the Moreno Valley area, they would be expected near Mystic Lake and impacts are not anticipated.

San Diego Thorn Mint occurs in the northwest portion of Moreno Valley (Box Springs Regional Park Section) where existing areas of Chaparral or sage scrub are designated as developable. Munz's Onion could occur where existing Riversidean Sage Scrub and grassland/sage scrub exist but are designated for potential development by all of the three land use alternatives (entirely by Alternative 1 and partially by Alternatives 2 and 3). Similarly, Nevin's Barberry may occur where sandy and gravelly Riversidean Sage Scrub occurs and could be developed under the proposed General Plan land use designations. Slender-horned Spineflower, an MSHCP Narrow Endemic Species, which occupies Chaparral, sage scrub, and grasslands, but may be dependent upon alluvial scrub. It could occur in the Badlands where alluvial scrub has been mapped and designated as developable. Each of these four species (San Diego Thorn Mint, Munz's Onion, Nevin's Barberry, and Slender-horned Spineflower) is a state and/or federally listed species. Impacts to these listed species would be considered significant.

Munz's Onion, Nevin's Barberry, and Slender-horned Spineflower are MSHCP covered species (Western Riverside County Regional Conservation Authority *et al.* 2003). MSHCP coverage of these species is based on conservation of known, extant, significant populations, none of which are in the planning area. However, impacts to a smaller, previously unknown population would still be significant. Since these are MSHCP covered species, mitigation would be limited to compliance with the MSHCP. Therefore, implementation of Mitigation Measure will assure that no significant impact associated with Munz's Onion, Nevin's Barberry, and Slender-horned Spineflower would occur.

Impacts to San Diego Thorn Mint, which is not an MSHCP covered species, would be addressed through federal and State regulations applicable to listed plant species.. This plant has been reported in an area northwest of Moreno Valley, but it can no longer be found in that area. There is insufficient information to determine where the plant can be found.

Sensitive Faunal Species Impacts and Mitigation

Impacts to sensitive faunal species are expected to occur in conjunction with habitat loss. The expected overall result of each Land Use Alternative would be a net reduction of habitat available to the full spectrum of wildlife that presently utilize the Planning Area. **Table 5.9-7** lists the species that are potentially affected by geographic planning area section.

Fragmentation of wildlife habitat and increased lighting and noise that will likely occur over time will also reduce the quality of existing habitats for many large mammalian predators, birds of prey, and their prey species. This is considered a potentially significant impact. Implementation of Mitigation Measures identified later in this section will reduce this impact to a level less than significant.

Significance of Impacts for MSHCP Covered Species and Mitigation

MSHCP covered species that may be impacted by the proposed project include those listed in **Table 5.9-8**. As previously stated, application of the proposed mitigation measures would reduce impacts to these species to a level below significant.

Sensitive species not addressed by the MSHCP, but that may be impacted by the proposed project are discussed in **Table 5.9-9**. Impact significance and details supporting the significant determination for these species are provided within the table. Significance determinations are based upon available regarding species status within the planning area and the Thresholds of Significance provided earlier. .Application of the proposed mitigation measures would reduce impacts to these species to a level below significant.

Raptor Wintering/Foraging Habitat Impacts and Mitigation

In fall and winter periods, most hawk species preferentially use grasslands and fields (Craighead and Craighead 1969). Urbanization can negatively impact raptors through habitat alteration, habitat loss and fragmentation, and direct human disturbance. Examinations of raptor foraging in relation to prey biomass and habitat structure indicate that plant cover exerts a significant effect on raptor foraging success and distribution (Preston 1990). A study conducted in Boulder, Colorado found that urban open space grasslands, not including isolated patches, can support sizable populations of most diurnal raptors, so long as prey populations persist, but some species are highly sensitive to landscape urbanization (Berry *et al*. 1998). Specifically, they found that counts of Bald Eagles, Ferruginous Hawks, Rough-legged Hawks, and Prairie Falcons were negatively correlated with the amount of urban development (Berry *et al*. 1998). In fact, as little as 5-7 percent urbanization was sufficient to cause the more sensitive raptor species to avoid a landscape (Berry *et al*. 1998).

Similarly the White-tailed Kite, Northern Harrier, Golden Eagle, Turkey Vulture, and accipiters are not known to be tolerant of urban activity and rarely nest in urban areas (Bird *et al*. 1996). Species such as the Northern Harrier that hunt by coursing low over the ground and surprising prey in their path require relatively large areas of open country to foraging within. In contrast, buteos typically possess a relatively low wing-to-aspect ratio and are less adapted for hunting in flight. They hunt primarily from elevated perches and prefer areas with available perch sites. Buteos tend to be more tolerant of urban activity, with the Ferruginous Hawk displaying the least degree of tolerance (Bloom and McCrary in Bird *et al*. 1996).

Proposed land use designations throughout the planning area (aside from Open Space and Floodplain) have the potential to reduce the availability of raptor foraging and wintering habitat. The Moreno Valley region is known for its high density of wintering raptors, and the loss of extensive portions of foraging habitats could have repercussions beyond the immediate area. All of Moreno Valley is vulnerable to such impacts under each of the

TABLE 5.9-7
POTENTIAL IMPACTS TO SENSITIVE FAUNAL SPECIES AND WILDLIFE RESOURCES BY PLANNING AREA SECTIONS

Planning Area Section	Primary Potential Habitat Impacts	Corresponding Potential Sensitive Wildlife Impacts	Other Potential Biological Resource Impacts
Box Springs Regional Park Section	Riversidean Sage Scrub, Non-native Grassland, Chaparral, Non-native Woodlands	Western Spadefoot, San Diego Banded Gecko, San Diego Horned Lizard, Orangethroat Whiptail, Coastal Whiptail, Silvery Legless Lizard, Coastal Rosy Boa, San Bernardino Ringneck Snake, Coast Patch-nosed Snake, Northern Red Diamond Rattlesnake, Pacific-Slope Flycatcher, Coastal Cactus Wren, California Gnatcatcher, Southern California Rufous-crowned Sparrow, Black-chinned Sparrow, Bell's Sage Sparrow, Lark Sparrow, Allen's Hummingbird, Rufous Hummingbird, California Thrasher, Loggerhead Shrike, California Horned Lark, White-tailed Kite, Cooper's Hawk, Sharp-shinned Hawk, Northern Harrier, Golden Eagle, Turkey Vulture, Merlin, Swainson's Hawk, Ferruginous Hawk, Prairie Falcon, Peregrine Falcon, Burrowing Owl, San Diego Black-tailed Jackrabbit, Los Angeles Little Pocket Mouse, California Pocket Mouse, Northwestern San Diego Pocket Mouse, Southern Grasshopper Mouse, San Diego Desert Woodrat, American Badger, Ringtail, and Mountain Lion.	Raptor Foraging/ Wintering Habitat
North-Central Section	Riversidean Sage Scrub, Non-native Grassland, Chaparral, Field/Cropland, Orchards/Groves, Riparian Scrub	Western Spadefoot, San Diego Banded Gecko, San Diego Horned Lizard, Orangethroat Whiptail, Coastal Whiptail, Silvery Legless Lizard, Coastal Rosy Boa, San Bernardino Ringneck Snake, Coast Patch-nosed Snake, Northern Red Diamond Rattlesnake, American Bittern, Black-crowned Night Heron, Great Blue Heron, Great Egret, Snowy Egret, Southwestern Willow Flycatcher, Least Bell's Vireo, Yellow Warbler, Yellow-breasted Chat, Lawrence's Goldfinch, Coastal Cactus Wren, California Gnatcatcher, Southern California Rufous-crowned Sparrow, Black-chinned Sparrow, Bell's Sage Sparrow, Lark Sparrow, Allen's Hummingbird, Rufous Hummingbird, California Thrasher, Loggerhead Shrike, California Horned Lark, Cooper's Hawk, Sharp-shinned Hawk, White-tailed Kite, Northern Harrier, Golden Eagle, Merlin, Prairie Falcon, Peregrine Falcon, Short-eared Owl, Burrowing Owl, Swainson's Hawk, Ferruginous Hawk, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Los Angeles Little Pocket Mouse, California Pocket Mouse, Northwestern San Diego Pocket Mouse, Southern Grasshopper Mouse, San Diego Desert Woodrat, American Badger, Ringtail, and Mountain Lion.	Raptor Foraging/ Wintering Habitat
Norton Younglove Section	Riversidean Sage Scrub, Non-native Grassland, Chaparral, Field/Cropland	Western Spadefoot, San Diego Banded Gecko, San Diego Horned Lizard, Orangethroat Whiptail, Coastal Whiptail, Silvery Legless Lizard, Coastal Rosy Boa, San Bernardino Ringneck Snake, Coast Patch-nosed Snake, Northern Red Diamond Rattlesnake, Coastal Cactus Wren, California Gnatcatcher, Southern California Rufous-crowned Sparrow, Black-chinned Sparrow, Bell's Sage Sparrow, Lark Sparrow, Allen's Hummingbird, Rufous Hummingbird, California Thrasher, Loggerhead Shrike, California Horned Lark,	Raptor Foraging/ Wintering Habitat

TABLE 5.9-7
POTENTIAL IMPACTS TO SENSITIVE FAUNAL SPECIES AND WILDLIFE RESOURCES BY PLANNING AREA SECTIONS

Planning Area Section	Primary Potential Habitat Impacts	Corresponding Potential Sensitive Wildlife Impacts	Other Potential Biological Resource Impacts
		White-tailed Kite, Northern Harrier, Golden Eagle, Turkey Vulture, Merlin, Prairie Falcon, Peregrine Falcon, Short-eared Owl, Burrowing Owl, Ferruginous Hawk, Swainson's Hawk, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Stephens' Kangaroo Rat, Los Angeles Little Pocket Mouse, California Pocket Mouse, Northwestern San Diego Pocket Mouse, Southern Grasshopper Mouse, San Diego Desert Woodrat, American Badger, Ringtail, and Mountain Lion.	
Gilman Springs Road-Badlands Section	Riversidean Sage Scrub, Non-native Grassland, Chaparral, Field/Cropland, Riversidean Alluvial Fan Scrub	Western Spadefoot, San Diego Banded Gecko, San Diego Horned Lizard, Orangethroat Whiptail, Coastal Whiptail, Silvery Legless Lizard, Coastal Rosy Boa, San Bernardino Ringneck Snake, Coast Patch-nosed Snake, Northern Red Diamond Rattlesnake, Black-crowned Night Heron, Great Blue Heron, Great Egret, Snowy Egret, Southwestern Willow Flycatcher, Least Bell's Vireo, Yellow Warbler, Yellow-breasted Chat, Lawrence's Goldfinch, Mountain Plover, Coastal Cactus Wren, California Gnatcatcher, Southern California Rufous-crowned Sparrow, Black-chinned Sparrow, Bell's Sage Sparrow, Lark Sparrow, Allen's Hummingbird, Rufous Hummingbird, California Thrasher, Loggerhead Shrike, California Horned Lark, White-tailed Kite, Northern Harrier, Golden Eagle, Turkey Vulture, Sharp-shinned Hawk, Cooper's Hawk, Merlin, Prairie Falcon, Peregrine Falcon, Short-eared Owl, Burrowing Owl, Ferruginous Hawk, Swainson's Hawk, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Los Angeles Little Pocket Mouse, California Pocket Mouse, Northwestern San Diego Pocket Mouse, Southern Grasshopper Mouse, San Diego Desert Woodrat, American Badger, Ringtail, and Mountain Lion.	Raptor Foraging/ Wintering Habitat
San Jacinto Wildlife Preserve-Mystic Lake Section	Field/Cropland	Mountain Plover, Ferruginous Hawk, Swainson's Hawk, Peregrine Falcon, Prairie Falcon, Turkey Vulture, Burrowing Owl, Short-eared Owl, Loggerhead Shrike, Lark Sparrow, California Horned Lark, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Stephens' Kangaroo Rat, San Bernardino Kangaroo Rat, Northwestern San Diego Pocket Mouse, Los Angeles Little Pocket Mouse.	Raptor Foraging/ Wintering Habitat

TABLE 5.9-7
POTENTIAL IMPACTS TO SENSITIVE FAUNAL SPECIES AND WILDLIFE RESOURCES BY PLANNING AREA SECTIONS

Planning Area Section	Primary Potential Habitat Impacts	Corresponding Potential Sensitive Wildlife Impacts	Other Potential Biological Resource Impacts
Lake Perris SRA Section	Field/Cropland	Mountain Plover, Ferruginous Hawk, Swainson's Hawk, White-tailed Kite, Prairie Falcon, Peregrine Falcon, Golden Eagle, Turkey Vulture, Burrowing Owl, Short-eared Owl, Lark Sparrow, Allen's Hummingbird, California Thrasher, Loggerhead Shrike, California Horned Lark, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Stephens' Kangaroo Rat, Northwestern San Diego Pocket Mouse, Los Angeles Little Pocket Mouse.	Raptor Foraging/ Wintering Habitat
East March AFB Section	Field/Cropland	Ferruginous Hawk, Swainson's Hawk, White-tailed Kite, Prairie Falcon, Peregrine Falcon, Golden Eagle, Turkey Vulture, Burrowing Owl, Short-eared Owl, Loggerhead Shrike, Lark Sparrow, California Horned Lark, Tricolored Blackbird, Yellow-headed Blackbird, Stephens' Kangaroo Rat, Los Angeles Little Pocket Mouse, Southern Grasshopper Mouse.	Raptor Foraging/ Wintering Habitat
Central Section	Field/Cropland, Riversidean Sage Scrub, Non-native Grassland, Chaparral, Orchards/Groves	Western Spadefoot, San Diego Banded Gecko, San Diego Horned Lizard, Orangethroat Whiptail, Coastal Whiptail, Silvery Legless Lizard, Coastal Rosy Boa, San Bernardino Ringneck Snake, Coast Patch-nosed Snake, Northern Red Diamond Rattlesnake, California Gnatcatcher, Southern California Rufous-crowned Sparrow, Black-chinned Sparrow, Rufous Hummingbird, Loggerhead Shrike, California Horned Lark, California Thrasher, Allen's Hummingbird, Cooper's Hawk, Sharp-shinned Hawk, White-tailed Kite, Northern Harrier, Golden Eagle, Merlin, Peregrine Falcon, Prairie Falcon, Short-eared Owl, Burrowing Owl, Swainson's Hawk, Ferruginous Hawk, Tricolored Blackbird, Yellow-headed Blackbird, San Diego Black-tailed Jackrabbit, Los Angeles Little Pocket Mouse, California Pocket Mouse, Northwestern San Diego Pocket Mouse, Southern Grasshopper Mouse, San Diego Desert Woodrat, Stephens' Kangaroo Rat, American Badger.	Raptor Foraging/ Wintering Habitat

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Western Spadefoot	MSHCP key population areas for the Western Spadefoot include areas that still support intact grassland, vernal pool, sage scrub, Chaparral, riparian, and mixed scrub/grassland vegetation communities and are in relatively large blocks and connected to other suitable habitat throughout the region (Dudek 2003b). Conservation for the Western Spadefoot will be achieved by the inclusion of suitable habitat within the San Jacinto Foothills and Riverside Lowlands Bioregions (which contains the Planning Area) within the MSHCP Conservation Area. Since the Land Use Alternatives could result in potential impacts to some of these vegetation communities within criteria areas of the MSHCP Conservation Area, the Western Spadefoot key MSHCP populations in the project area may be adversely, significantly impacted by the proposed project.
Coastal Whiptail	Open grassland/coastal sage scrub habitats throughout the MSHCP Plan Area are considered to support key populations (Dudek 2003b). As with the horned lizard and Orangethroat Whiptail, the MSHCP relies upon conservation within Core Areas that may be impacted within the Reche Canyon/Badlands Plan Area. Since this is an MSHCP covered species and Planning Area Land Use Alternatives could feasibly preclude species conservation, impacts would be considered significant.
Northern Red Diamond Rattlesnake	Implementation of the MSHCP, including the conservation of existing populations and suitable habitat will maintain viable populations of the rattlesnake within the MSHCP Conservation Area. This strategy requires conservation of both the Wildlife Area/Lake Perris (Existing Core H) and Badlands (Proposed Core 3) (Dudek 2003b). Since the proposed Land Use Alternatives could impact Proposed Core 3, impacts to this species have been assessed as significant.
Orangethroat Whiptail	The Orangethroat Whiptail may experience an alteration in its local distribution or known range in the area through the loss of suitable and occupied habitat (particularly within the Badlands). More than 50% of historic occurrences of the Orangethroat Whiptail in western Riverside County are presumed extirpated due to loss of habitat. The remaining range seems to be tied to Coastal Sage Scrub adjacent to floodplains or terraces along streams occurring in western Riverside County (Dudek 2003b). Comparable to the horned lizard, MSHCP conservation of this species relies upon conservation within Core Areas of the Conservation Area including the Badlands (Core 3) and Box Springs Mountain (Existing Noncontiguous Habitat Block A and Constrained Linkage 8). Potential range/distribution impacts within these areas under the proposed Land Use Alternatives would be significant.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
San Diego Banded Gecko	MSHCP conservation for the San Diego banded gecko will be achieved by the inclusion of suitable Conserved Habitat within 7 Core Areas which are composed of large blocks of habitat within the MSHCP Conservation Area. The MSHCP key areas include locations where granitic rock outcrops are present in scrub or Chaparral habitats (Dudek 2003b). The rocky outcrops in the higher elevations of Moreno Valley are not as vulnerable to development as low-lying areas; therefore, this reptile is expected to persist in these areas, regardless of the proposed project. However, since this species is addressed by the regional planning effort and calls for conservation within Core and Criteria Areas, some of which (*e.g.*, Core Area 3 in the Badlands) maybe impacted by the proposed Land Use Alternatives, impacts are considered significant.
San Diego Horned Lizard	MSHCP conservation of this species relies upon conservation within Core Areas of the Conservation Area including the Badlands (Core 3) and Box Springs Mountain (Existing Noncontiguous Habitat Block A and Constrained Linkage 8). Under the proposed Land Use Alternatives impacts may occur within these areas. A serious threat to the San Diego Horned Lizard is the progressive elimination of its food base by exotic ants that have invaded upland habitats. Since the invasive ants are known to expand in association with development, and there has been no effective, large-scale method of control yet developed, impacts to San Diego Horned Lizard may be significant under build-out conditions.
American Bittern	Impacts to the American Bittern have been assessed where this species may intermittently occupy Riparian Scrub; however, impacts to known nesting sites and MSHCP key areas (San Jacinto Wildlife Area/Mystic Lake) are not anticipated under the MSHCP. The proposed Land Use Alternatives are not expected to effect MSHCP conservation of this species, nor would the species' range be restricted or population viability be reduced; thus, impacts are not significant.
Bell's Sage Sparrow	Lovio (1999) found Bell's Sage Sparrow to be the most sensitive to habitat fragmentation of 31 nesting species in southwestern San Diego County. During initial studies, the smallest fragment of habitat in which Lovio found the species was 160 hectares (about 400 acres) (Lovio 1999). MSHCP areas with the Planning Area proposed for conservation (for this species) include Box Springs Mountain and the Badlands (Dudek 2003b). Conservation of Criteria Areas within these Cores would allow for preservation of the species through habitat preservation and avoidance or minimization of edge effects. However the proposed Land Use Alternatives have potential to result in impacts within these areas that could hinder or prevent conservation through habitat loss and increased edge effects. These impacts would be significant.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Black-crowned Night Heron	Impacts to this Heron have been assessed where this species may occupy Riparian Scrub. Inclusion of suitable primary breeding and foraging habitat and secondary foraging habitat will achieve MSHCP conservation of this species. The core known or potential breeding locations within the Planning Area are limited to Mystic Lake/San Jacinto Wildlife Area, which is not proposed for impacts. Thus, the proposed Land Use Alternatives are not expected to effect MSHCP conservation of this species, nor would the species' range be restricted or population viability be reduced and impacts would, correspondingly, not be significant.
Burrowing Owl	The MSHCP Conservation Area will provide adequate habitat for foraging and breeding and includes conservation of Criteria Areas within Box Springs Mountain, Lake Perris/Mystic Lake, and the Badlands (Dudek 2003b). The MSHCP conservation strategy also includes pre-construction surveys of potential habitat areas and conservation as appropriate until sufficient conservation is attained because it occurs in grassland habitats that are not relatively abundant within the MSHCP Conservation Area and the distribution of the species within the Plan Area is not well known (Dudek 2003b). Due to the potential for impacts to this species within extensive habitats that may be necessary for conservation, impacts are considered significant.
California Gnatcatcher	The MSHCP conservation strategy for this species involves preservation of both suitable habitat and Core Areas within large blocks of habitat and connections of these Core Areas (Dudek 2003b). Areas occupied by the gnatcatcher but not constituting a Core Area that will be conserved include…the Badlands, which provide connectivity into San Bernardino County (Dudek 2003b). Stepping stone reserves conserve some locations of gnatcatchers and connect some of the smaller numbers of gnatcatchers which do not comprise core populations including, Sycamore Canyon Regional Park which is connected by Box Springs Mountains to Highgrove by either very narrow drainages or stepping stone reserves (Dudek 2003b). Impacts to criteria areas within the Badlands or Box Springs Regional Park would be significant due to the species status, critical habitat designations, and the potential to preclude conservation under the MSHCP.
California Horned Lark	Although impacts to this species would be expected due to the loss of foraging and nesting habitat, several large blocks of habitat supporting the current known and potential foraging and nesting locations of the horned lark will be conserved as Criteria Area and Public/Quasi- Public lands within the MSHCP Conservation Area, including the Mystic Lake/San Jacinto Wildlife Area. Since the proposed Land Use Alternatives do not conflict with this conservation strategy, impacts are not considered significant.
Coastal Cactus Wren	The conserved MSHCP Core Areas for this species include (but are not limited to) the suitable and occupied habitat within the Criteria Area and Public/Quasi-Public designations in the Badlands, Box Springs Mountains, and Lake Perris/Bernasconi Hills (Dudek 2003b). The Lake Perris Core Area is within the low hills between the San Jacinto Wildlife Area and Mystic Lake (and within the Bernasconi Hills)(Dudek 2003b). Conservation of the cactus wren also requires species-specific conservation measures within the Core Areas of the MSHCP Conservation Area via a number of methods. Impacts to these Core Areas may result under the proposed Land Use Alternatives and the impacts would be significant.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Cooper's Hawk	Several large blocks of habitat supporting or potentially supporting the hawk will be conserved as Criteria Area and Public/Quasi-Public designations, including the San Jacinto Wildlife Area-Lake Perris and the Badlands (Dudek 2003b). The Badlands area provides a major habitat block and linkage to Potrero Creek, Lake Perris and Mystic Lake/San Jacinto Wildlife Area, and to San Timoteo Creek (Dudek 2003b). Thus, impacts within the Badlands that could result following implementation of the proposed Land Use Alternatives would be significant.
Ferruginous Hawk	Large blocks of habitat supporting the current known and potential foraging locations of the Ferruginous Hawk will be conserved as Criteria Area and Public/Quasi-Public including San Jacinto Wildlife Area/Mystic Lake and surrounding playa Habitat and the Badlands (Dudek 2003b). Due to the potential for impacts to suitable habitat within these areas under the Policy Amendment, significant impacts have been assessed
Golden Eagle	Conservation of this species under the MSHCP calls for preservation of known nest sites, buffers, and areas which may contain potential nesting areas and contain potential and known foraging habitat, including the Badlands and Lake Perris and the surrounding environment (Dudek 2003b). Impacts to Criteria Areas in these areas would be significant impacts.
Great Blue Heron	This heron may be impacted through a loss of Riparian Scrub and/or open foraging habitats (Non-native Grasslands and Field/Croplands). However, comparable to the bittern and Black-crowned Night Heron, the MSHCP conservation strategy for this species would not be effecetd by the proposed Land Use Alternatives and impacts are therefore not significant.
Least Bell's Vireo	Several large blocks of habitat supporting or potentially supporting the vireo are within the Criteria Area and Public/Quasi-Public designations, including the Badlands (Dudek 2003b). The Badlands area provides a major habitat block that provides a linkage to Potrero Creek, Lake Perris, San Jacinto Wildlife Area and continuing north into San Bernardino County (Dudek 2003b). Impacts to this area are possible under the Land Use Alternatives; thus, significant impacts could occur.
Loggerhead Shrike	MSHCP Core Areas where conservation of this species will focus include Lake Perris/Mystic Lake/San Jacinto Wildlife Area (Existing Core H) and the Badlands (Proposed Core 3) (Dudek 2003b). For the shrike, conservation of the Badlands is important for maintaining connectivity between the lowlands and Cherry Valley/Banning (Dudek 2003b). Due to the potential for impacts within the Badlands, impacts to this species would be considered significant.
Merlin	Several large blocks of habitat supporting the known and potential foraging locations of the Merlin will be conserved as MSHCP Criteria Area and Public/Quasi-Public, including the Mystic Lake/ San Jacinto Wildlife Area. Although impacts to this species have been assessed outside of the San Jacinto Wildlife Preserve-Mystic Lake Section, these impacts would not be significant, as significant numbers of Merlins are not anticipated to occur within these areas. Within the San Jacinto Wildlife Preserve-Mystic Lake Section impacts are not expected.
Mountain Plover	The MSHCP address conservation of this species through preserving a block of well connected habitat supporting the current known locations, and several smaller blocks of habitat supporting potential foraging habitat as Criteria Area and public/quasi public, including the Mystic Lake/ San Jacinto Wildlife Area with adjacent playa habitat, and San Jacinto River floodplain, and playas west of Hemet as the primary focus areas and the grassland adjacent to Lake Elsinore, Lake Skinner/Diamond Valley Lake, and Lake Mathews as other potential habitat areas. The proposed Land Use Alternatives

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
	support this strategy through designation of virtually all of the San Jacinto Wildlife Preserve-Mystic Lake Planning Area Section as Floodplain. Taking the MSHCP into consideration, impacts would not be significant.
Northern Harrier	MSHCP conservation will focus on several large blocks of habitat including foraging and nesting locations conserved as Criteria Area and Public/Quasi-Public designations, including the Mystic Lake/San Jacinto Wildlife Area and Badlands (Dudek 2003b). Impacts within the Badlands would be significant.
Prairie Falcon	MSHCP Conservation Area will provide adequate habitat for nesting and foraging including the San Jacinto Wildlife Preserve area (Dudek 2003b). Since the proposed Land Use Alternatives do not conflict with the MSHCP conservation strategy, impacts are not anticipated to be significant.
Peregrine Falcon	MSHCP Conservation Area will provide adequate habitat for including the San Jacinto Wildlife Preserve area (Dudek 2003b). Since the proposed Land Use Alternatives do not conflict with the MSHCP conservation strategy, impacts are not anticipated to be significant.
Sharp-shinned Hawk	Several large blocks of habitat supporting or potentially supporting this hawk will be conserved within the Criteria Area and Public/Quasi-Public lands, including the Mystic Lake/San Jacinto Wildlife Area, Box Springs, and the Badlands (Dudek 2003b). Potential impacts within the Box Springs Regional Park and Badlands Criteria Areas would be significant.
Southern California Rufous-crowned Sparrow	Several large blocks of Habitat supporting the Southern California Rufous-crowned Sparrow will be conserved within Criteria Area and Public/Quasi-Public designations, including the Core Areas at Box Springs Mountains, Lake Perris, and the Badlands (Dudek 2003b). Impacts to these areas targeted for conservation would be possible under the Land Use Alternatives and these impacts would be significant.
Southwestern Willow Flycatcher	The flycatcher may occur within riparian habitats, although the potential for resident flycatchers is low. Nevertheless, due to the species' specialized habitat requirements, all known populations should be considered critical. Box Springs Mountain has smaller riparian systems that contain potentially suitable habitat and could be occupied in the future. Small habitat patches and sites with small numbers are likely to be as important as the large sites (Dudek 2003b). Due to the importance of any habitat to recovery of the species, any impacts are significant.
Swainson's Hawk	The large blocks of potentially suitable habitat which will be conserved for this hawk include the San Jacinto Wildlife Area/Mystic Lake and surrounding playa Habitat, Box Springs Mountain, and the Badlands (Dudek 2003b). Due to the potential for impacts to suitable habitat within these areas under the Policy Amendment, significant impacts have been assessed.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Tricolored Blackbird	Several large blocks of Habitat supporting the historic breeding locations with currently suitable habitat, potential nesting colony areas, and potential foraging locations of the Tricolored Blackbird will be conserved as Criteria Area and Public/Quasi-Public Lands, including the Mystic Lake/San Jacinto Wildlife Area. Areas of potential foraging habitat, including grassland and agriculture land, are including within or adjacent to these areas that are, or have been, identified as breeding colony locations. Other large blocks of habitat that may provide foraging and nesting opportunities include (but are not limited to) the Badlands (Dudek 2003b). Impacts are not anticipated within the San Jacinto Wildlife Preserve itself, but impacts may occur on adjacent Field/Croplands potentially used for foraging. These impacts would be significant if they preclude achievement of the conservation strategy.
Turkey Vulture	Several large blocks of habitat supporting the current known and potential foraging and nesting locations of the turkey vulture will be conserved as criteria area and Public/Quasi-Public designations, including Rawson Canyon and the Bernasconi Hills area (Dudek 2003b). Special conservation measures specific to the Turkey Vulture will be required by the MSHCP including protection of nest sites from human disturbance during the nesting season (Dudek 2003b). Since the Planning Area is not known to support nesting vultures and adequate foraging habitat would be conserved through the MSHCP, outside of the Planning Area, significant impacts are not anticipated.
Yellow-breasted Chat	Areas not documented as MSHCP Core Areas but that contain scattered point locations and/or provide potential chat suitable habitat include (but are not limited to) the Badlands and the Mystic Lake/San Jacinto Wildlife Area (Dudek 2003b). The Badlands area provides a major Habitat block or proposed core that provides a connection to Potrero Creek and the Lake Perris area and Mystic Lake/San Jacinto Wildlife Area (Dudek 2003b). The MSHCP Conservation Area is slated to provide adequate linkages between Core Areas and smaller drainages that may support small numbers of the species. The proposed Land Use Alternatives could impact chat conservation within the Badlands; these impacts would be significant.
Yellow Warbler	According to the MSHCP species account, "the Badlands area provides a major Habitat block that provides a linkage to Potrero Creek, Lake Perris/Mystic Lake, and San Jacinto Wildlife Area...Conservation of the small patches of riparian habitat and the sites containing small numbers of yellow warblers may contribute to the populations within the Plan Area (Dudek 2003b). The proposed Land Use Alternatives would allow for development within Criteria Areas of the Badlands which may be necessary for the conservation of the Yellow Warbler within the MSHCP Conservation Area; thus, impacts are significant.
White-tailed Kite	Several large blocks of Habitat supporting the current known nesting and foraging locations, wintering sites, and potential foraging and nesting locations of the white-tailed kite will be conserved as Criteria Area and Public/Quasi-Public designations, including the Lake Perris/Mystic Lake area (Dudek 2003b). The proposed Land Use Alternatives are not expected to preclude adequate conservation of this species, thus impacts are not anticipated to be significant.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Los Angeles Little Pocket Mouse	Conservation of this pocket mouse will be achieved by inclusion of suitable Conserved Habitat in the MSHCP Conservation Area. This includes key populations in the Planning Area within the Badlands, where an important complex has been identified for this species. The San Jacinto Wildlife Area-Lake Perris-Badlands-San Jacinto River complex includes important discrete pocket mouse locations, including Reche Canyon, Potrero Valley, and San Timoteo Creek. This habitat complex generally is contiguous, with the exception of four major roads: Gilman Springs Road between the San Jacinto Wildlife Area and the Badlands; Highway 79 between the northwestern portion of the Badlands and Potrero Valley; Highway 60 which bisects the Badlands; and Redlands Boulevard which also bisects the Badlands farther to the west. Construction of adequate culverts below some these roads may be needed to allow for pocket mouse movement within these areas. Impacts within this complex may result in significant impacts.
Mountain Lion	The configuration of the MSHCP reserve system to accommodate movement and dispersal of lions to areas such as the Santa Ana Mountains, Lake Mathews-Estelle Mountain, Lake Skinner-Diamond Valley Lake, the Badlands, and the San Bernardino Mountains is crucial. Habitat linkages between these Core Areas will be important for accommodating movement and dispersal (Dudek 2003b). The Badlands provide a northwest-southeast movement corridor connected to the San Jacinto Wildlife Area-Lake Perris to the south, the San Jacinto Mountains to the southeast and the San Bernardino Mountains to the north. The Badlands reserve area would be comprised of Criteria Area, Public/ Quasi-Public lands and rural mountainous designation areas. Significant obstacles to large mammal movement along the Badlands are Highway 60 and Lamb Canyon (Highway 79) (Dudek 2003b). Impacts to this Core Area may be significant for Mountain Lion.
Northwestern San Diego Pocket Mouse	The largest intact habitat complex for this pocket mouse is the Badlands-San Jacinto Mountain foothills-Agua Tibia Wilderness complex, which comprises approximately the eastern one-third of the Plan Area. Continuous habitat for the woodrat runs from the northwest extent of the Badlands north of Moreno Valley south to the foothills of the San Jacinto Mountains in the area of Sage and farther south to the Agua Tibia Wilderness and the Cahuilla and Anza valleys (Dudek 2003b). It should be noted that a substantial amount of the Badlands habitat is designated rural mountainous, which will provide some habitat for the pocket mouse, but which will not be managed as habitat (Dudek 2003b). Given the steep topography in the Badlands, it is highly likely that the majority of the area will remain undeveloped and remain suitable for the pocket mouse; however, significant impacts could occur here through residential development.
San Bernardino Kangaroo Rat	Conservation of the San Bernardino Kangaroo Rat will be achieved by inclusion of suitable Conserved Habitat in the MSHCP Conservation Area. The proposed Land Use Alternatives are not anticipated to effect this conservation strategy and thus, any impacts have been considered less than significant. However, per the MSHCP, additional surveys would be required within portions of the Planning Area (based on Dudek 2003a, Figure 6-5), prior to subsequent development, to conform to the MSHCP Additional Survey Needs and Procedures.

TABLE 5.9-8
IMPACTS TO MSHCP COVERED SPECIES

MSHCP Covered Species subject to Potential Impacts	Impacts to Species
San Diego Black-tailed Jackrabbit	The MSHCP Conservation Area includes large habitat areas and adequate habitat linkages that will allow for the natural fluctuations in population densities and distribution of the jackrabbit, including (but not limited to) the Badlands-San Jacinto River (Dudek 2003b). Impacts to suitable habitats within Criteria Areas of the Badlands may result in significant impacts.
San Diego Desert Woodrat	Conservation for the woodrat will be achieved by inclusion of suitable Conserved Habitat in the MSHCP Conservation Area, Including large habitat blocks and linkages that are suitable for occupation by the woodrat in four major habitat complexes (Dudek 2003b). The largest intact habitat complex for the desert woodrat is the Badlands-San Jacinto Mountain foothills-Agua Tibia Wilderness complex, which comprises approximately the eastern one-third of the Plan Area. Continuous habitat for the woodrat runs from the northwest extent of the Badlands north of Moreno Valley south to the foothills of the San Jacinto Mountains in the area of Sage and farther south to the Agua Tibia Wilderness and the Cahuilla and Anza valleys (Dudek 2003b). Impacts to Core Areas within this complex would be significant.
Stephens' Kangaroo Rat	Although the Stephens' Kangaroo Rat is listed under the ESA, the Habitat Conservation Plan (HCP) for the Stephens' Kangaroo Rat in Western Riverside County provides an avenue for legal "take" of this species, if the HCP's conditions and requirements are met (RCHCA 1996). Expansion of the MSHCP Conservation Area under the MSHCP would increase the amount of Conserved Habitat by at least 3,200 acres in the two new Core Areas and by several thousand acres in smaller scattered patches throughout the MSHCP Conservation Area. Impacts to this species would be considered significant, as it is a listed species.

TABLE 5.9-9
IMPACTS TO NON-COVERED SPECIES

Non-MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Coastal Rosy Boa	The Coastal Rosy Boa is also a Special Animal with a restricted range, but its CNDDB ranking indicates the species is apparently secure. Planning Area impacts to this species are not expected to reduce its range or effect population viability; thus, they are not significant.
Coast Patch-nosed Snake	Extensive areas in coastal southern California with a shrubby habitat structure that are suitable for the Coast Patch-nosed Snake have been converted through various land uses to habitats largely unsuitable to this species. However, a large amount of suitable habitat still exists in the Planning Area region and the species is expected to persist. Impacts are not anticipated that would reduce population levels below viability or reduce the species range and thus impacts are not significant.
San Bernardino Ringneck Snake	Although the San Bernardino Ringneck Snake may experience an alteration in local distribution pattern in the area through the loss of suitable and occupied habitat within the Badlands, this species' range is not expected to contract. Proposed designation of the Badlands as Rural Residential requires that properties with slopes greater than 25% maintain 60% of the area in open space. This restriction is expected to maintain suitable habitat for the ringneck. And impacts would not be significant.
Silvery Legless Lizard	The Silvery Legless Lizard's fossorial existence in substrates with a high sand content renders it vulnerable. This species has probably disappeared from 20% of the area within its known California historic range (California Department of Fish and Game Habitat Conservation Planning Branch 2000d). It is believed that legless lizards cannot survive in urbanized, agricultural, or other areas where a loose substrate in which to burrow has been removed or radically altered; however, this species may persist in agricultural areas where suitable substrate persists. Currently, there is limited availability of suitable habitats for the legless lizard within the project area, and no specific locations of population sites have been documented in Moreno Valley; therefore, impacts to this species are not expected to be significant
Allen's Hummngbird	Allen's Hummingbirds were recently added to the CDFG Special Animals list but their status remains relatively low. They are known to utilize a variety of habitats and are relatively urban-tolerant making them less susceptible to impacts. Impacts to this species would not effect the regional population of species range and would not be significant.
Black-chinned Sparrow	Potential impacts to the Black-chinned Sparrow may occur through loss of suitable habitats, particularly large blocks of Coastal and Riversidean Sage Scrub and/or Chaparral. It has been consistently reported within Breeding Bird Survey data from the region and is expected to persist within the Moreno Valley area in moderate numbers within suitable habitat. The Black-chinned Sparrow is listed on the 2001 Draft Birds Species of Special Concern list for California (CDFG 2001d, CDFG and PRBO 2001). The Black-chinned Sparrow may be less susceptible to potential habitat loss impacts than other

TABLE 5.9-9
IMPACTS TO NON-COVERED SPECIES

Non-MSHCP Covered Species subject to Potential Impacts	Impacts to Species
	local passerines because of an apparent preference for steep sloping terrain, which supports suitable sage scrub and Chaparral habitats. This terrain generally limits the allowable density under build-out and is less attractive to developers; thus, it is not under as severe development pressure. Impacts to this species are not expected to be significant due to their habitat preferences and the limited allowable density of development therein.
California Thrasher	California Thrasher was recently added to the CDFG Special Animals list, but is considered to be a low sensitivity species. Due to this species ability to occupy a variety of sites, use of habitats that may be less intensely developed due to slope constraints, and relative tolerance of fragmentation, the species is expected to persist in the area without significant impacts to population viability and/or range.
Great Egret	The Breeding Bird Survey population results for California Great Egrets display significant increasing trends (Sauer *et al.* 2000). Impacts to Great Egret through loss of riparian habitat are not expected to be significant. The Moreno Valley area's limited Riparian Scrub habitats are not known to support substantial breeding populations of this species, and there is no indication that impacts to the species within the Planning Area would constitute a substantial loss to the regional or overall populations.
Lawrence's Goldfinch	The Breeding Bird Survey data indicate that the population trend for the Lawrence's Goldfinch in California may be declining but the trend is not significant; furthermore, the trend for the species in southern California grasslands indicates an increase (Sauer *et al.* 1999). It has not been included on the Draft Bird Species of Special Concern list for California and does not appear to be subject to imminent threats, particularly within the western Riverside County area. Impacts to Lawrence's Goldfinch through loss of riparian habitat are not expected to be significant. The Moreno Valley area's limited Riparian Scrub habitats are not known to support substantial breeding populations, and there is no indication that impacts within the Planning Area would constitute a substantial loss to the regional or overall populations.
Lark Sparrow	This species is only maintains sensitivity for nesting sites. It is expected within the Planning Area in moderate densities where grasslands or fields retain shrubs, trees, or fence posts for perching. The Planning Area population is not known to be significant, nor is it at the edge of the species' range. Loss of individuals due to the proposed Land Use Alternatives would not be significant.
Pacific-slope Flycatcher	This relatively ubiquitous species was recently listed by CDFG as a Special Animal and is a Federal Species of Concern. It is typically associated with riparian forest and is not expected in the Planning Area in significant numbers. Impacts would not alter the species range or population on a regional or species-wide level and are not considered significant.
Rufous Hummingbird	The Rufous Hummingbird would only be expected on a migrant basis. The Partners in Flight priorities indicate that threats to this hummingbird in its non-breeding range are not high (Partners In Flight Bird Prioritization Technical Committee 1998). Impacts are not expected to be significant due to the lack of potential range or population viability impacts.

TABLE 5.9-9
IMPACTS TO NON-COVERED SPECIES

Non-MSHCP Covered Species subject to Potential Impacts	Impacts to Species
Snowy Egret	According to the Breeding Bird Survey, Snowy Egret displays significant increasing population trends for California (Sauer *et al.* 2000). Impacts to Snowy Egret are not expected to be significant. The Planning Area is not known to support a substantial breeding population and there is no indication that impacts would constitute a substantial loss to the regional or overall populations.
Short-eared Owl	The Short-eared Owl has CDFG Species of Special Concern status, but only for nesting sites. The Short-eared Owl is declining due to loss of open grassland habitat. The species is also vulnerable to depredation by skunks, feral cats and dogs, especially during nesting. The Short-eared Owl only occurs in the Moreno Valley area as a wintering or migrating species [Muehter, V. R. (ed.) 1998]. While threats to the non-breeding season habitat are imminent, the species' widespread wintering range likely decreases susceptibility. Due to the widespread wintering range of the species, the lack of evidence of significant wintering populations in the Moreno Valley area, and sensitivity status for nesting areas only, impacts are not expected to be significant.
Yellow-headed Blackbird	Impacts to Yellow-headed Blackbird would be confined to foraging area impacts, and it is believed that adequate amounts of foraging habitat will remain throughout the region despite the implementation of any of the Land Use Alternatives.
California Pocket Mouse	The California Pocket Mouse occupies a variety of habitats, but its range within Western Riverside is poorly documented or understood. Relatively abundant numbers of this species have been recorded within suitable habitat. No significant populations for this species have been identified within or adjacent to Moreno Valley, and as such, no significant impacts have been assessed.
Southern Grasshopper Mouse	The Southern Grasshopper Mouse may experience an alteration in local distribution or known range in the area through the loss of suitable and occupied habitat within the Badlands. The Southern Grasshopper Mouse is restricted to coastal Southern California, with marginal records for Mint Canyon west of Palmdale, San Fernando, Riverside, Valle Vista, Warner Pass, La Puerta Valley, Jacumba, Santee Mountains, and the mouth of the Tijuana River Valley (Hall 1981). It has also been reported from Reche Canyon (2004b). Development in the Moreno Valley area may restrict the eastern range of this species and extirpate populations within the Planning Area. Although development in the Badlands would restrict development densities and the amount of overall habitat conversion within steep slopes, areas of flatter terrain (which this species prefers) may become subject to greater development pressure. This species is found in low numbers and requires a large home range, making it susceptible to habitat fragmentation (2004a). Thus, the persistence of smaller areas of steep terrain is not expected to be sufficient to maintain the Planning Area population. This loss would constitute a loss of a significant portion of the species range and would be significant.
American Badger	American Badger populations have declined drastically in California within the last century, and they have been extirpated from many areas in southern California (California Department of Fish and Game Habitat Conservation Planning Branch 2000). Agricultural and urban developments have been the primary causes of decline and extirpation of populations of badgers in California. No current data exist on the status of American Badger populations in

TABLE 5.9-9
IMPACTS TO NON-COVERED SPECIES

Non-MSHCP Covered Species subject to Potential Impacts	Impacts to Species
	California, but they have obviously declined or disappeared in large sections of the state, particularly areas west of the Cascade-Sierra Nevada mountain axis and in coastal basins of southern California (CDFG Habitat Conservation Planning Branch 2000a). Loss of large expanses of grassland habitats and other anthropogenic influences are associated with this species' decline. As habitat becomes more fragmented, it will become increasingly difficult for badgers to disperse to suitable habitat. Impacts to native habitats suitable for badger occupation may occur within the Badlands. However, based on review of the City's Slope analysis for these areas, much of the Badlands will be subject to steep slope development regulations which will provide a measure of protection to this species through preservation of 35-60% open space.
Ringtail	Ringtails have a decided preference for Chaparral, rocky hillsides, and riparian areas (Belluomini 1980). Although riparian areas are being degraded throughout the state, ringtail populations do not appear to be threatened at present. Abundance data suggest that ringtail numbers are either stable or increasing (Orloff 1980). Impacts have been assessed as not significant.

proposed Land Use Alternatives due to the potential for loss of large tracts of Non-native Grassland, Riversidean Sage Scrub, and Field/Croplands.

In the Box Springs Mountain area, under Alternative 1, the loss of large areas of Non-native Grassland and Riversidean Sage Scrub could result in potential impacts to raptor foraging and wintering habitat. Impacts to raptors could potentially occur under Alternative 2 or 3, but they would not be as extensive as those allowed under Alternative 1.

Impacts to raptor foraging habitat could occur where Field/Croplands are proposed for designation as Residential, Business Park, Commercial, Office, or Mixed Use in the eastern half of the North-Central Section, the northern and western portions of the San Jacinto Wildlife Area-Mystic Lake Section, the northwestern corner of the Lake Perris SRA Section, the southern portion of the East March AFB Section, and the eastern half of the Central Section.

In the Norton Younglove Section raptor foraging habitat loss could occur as the result of Riversidean Sage Scrub, Non-native Grassland, or Field/Croplands habitats being designated as Residential. In the Gilman Springs Road-Badlands Section the situation is similar; the loss of large areas of Non-native Grassland and sage scrub could result in impacts to resident, migrant, and wintering raptors.

Although, potential raptor foraging and wintering impacts are expected to be significant; these impacts have been addressed both on a habitat basis and a species basis, where sensitive species would be affected, and addressing them separately (in terms of additional mitigation) would be redundant. Furthermore, impacts to raptor species have been addressed by the MSHCP, which provides coverage for Cooper's Hawk, Ferruginous Hawk, Golden Eagle, Merlin, Northern Harrier, Peregrine Falcon, Prairie Falcon, Sharp-shinned Hawk, Swainson's Hawk, and White-tailed Kite. Therefore, application of mitigation measures would reduce raptor foraging impacts to a level below significant.

Impacts to Federal or State Listed Species or Designated Critical Habitat

Significant impacts to Western Snowy Plover are not anticipated under the any of the three land use alternatives. The Western Snowy Plover is expected within the Alkali Playa habitat of the San Jacinto Wildlife Area-Mystic Lake Section, which is proposed for designation as Floodplain and is not expected to be subject to increased development pressure.

All other listed species impacts and impacts to designated critical habitat have been previously addressed (see Tables 5.9-8 and 5.9-9).

Stephens' Kangaroo Rat Habitat Conservation Plan (HCP) Core Reserve Impacts and Mitigation

Portions of the San Jacinto Core Reserve and Potrero ACEC Core Reserve for the Stephen's kangaroo rat lie within and/or adjacent to the planning area. Core areas with the potential for impacts have been identified by comparing Figure 21 of the Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County (RCHCA 1996) and the proposed Land Use Policy Maps (Alternatives 1-3).

No habitat loss impacts within the Potrero ACEC Core Reserve are anticipated under any of the three proposed land use alternatives, but other core reserve areas immediately adjacent to the planning area boundary may experience indirect impacts.

Under the three proposed land use alternatives, there is a Commercial designation along the eastern boundary of the San Jacinto Core Reserve. On the reserve's northwestern edge, where the core reserve extends westward from Lake Perris State Recreation Area (SRA) into city lands, the area is proposed for Open Space designation. It is believed, that the Open Space designation follows the reserve boundary and no habitat loss impacts are anticipated within the reserve. Indirect impacts could occur where an area bordering a reserve is currently vacant and has a proposed designation that would allow for development. This is the case to the north of the San Jacinto Core Reserve boundary. This potential for development and impacts discussed above does not differ between the three General Plan land use alternatives.

Approval and implementation of the HCP in 1996 was based on the determination that the HCP would conserve the kangaroo rat within the western Riverside County area covered by the plan (Dudek 2003b). Thus, impacts that occur outside of the reserve, albeit adjacent, are not considered to be significant.

The HCP states that a regionally important corridor for the rat exists from San Jacinto-Lake Perris east past Gilman Springs Road to the Badlands (RCHCA 1996). There have been a series of recent land acquisitions by the State of California that established substantial corridors between these areas and as such, implementation of any of the three proposed General Plan land use alternatives would not be expected to have a significant impact on the corridor (City of Moreno Valley 2003). In addition, application of the mitigation measure that calls for implementation of the MSHCP, would enhance this corridor, thereby ensuring that impacts to the Stephen's Kangaroo Rat HCP remain at a level below significant.

San Jacinto Wildlife Area Impacts and Mitigation

Since the initiation of the biological review for the General Plan Update, the San Jacinto Wildlife Area has undergone several boundary adjustments. Most importantly, land north of the old boundary has been added to the area owned and managed by the California Department of Fish and Game (CDFG).

The proposed Land Use Alternatives do not show the 1,000 acre expansion of the San Jacinto Wildlife Area (SJWA) within the City limits because the area is subject to a development agreement that precludes the City from unilaterally changing the land use plan for that area. The land use designation is just a technicality. The SJWA is operated by CDFG for wildlife conservation purposes and Moreno Valley does not have jurisdiction over the area. It would not be subject to development, regardless of the designation or road alignments shown on the Moreno Valley General Plan. Therefore, none of the proposed land use alternatives would have a direct effect of the SJWA.

Increased traffic, associated with increased development, could occur in the area of the SJWA under each of the alternatives' build-out conditions. Roads have been implicated as hazards due to road kill for a number of species, as displacement factors affecting animal distribution and movement patterns, as population fragmenting factors, and as sources of deleterious edge effects (Noss 2002). While no new roads are expected in the SJWA, under the project examined herein, Gilman Springs Road would be expected to support a greater traffic volume.

Beyond the updated SJWA boundaries, lands to the north and east are zoned for residential and commercial development. The corresponding increase in human use, traffic, night lighting and water runoff could have collateral impacts on the flora and fauna within the SJWA.

The SJWA is part of one of the MSHCP core habitat reserves (Core H). The MSHCP was based on the assumption that areas outside of the core reserves would be developed and that such development would have indirect effects on the core reserves. The MSHCP includes guidelines to reduce the effects of development along the urban/wildlands interface (MSHCP Section 6.1.4). The MSHCP also includes planning criteria (Biological Considerations for Subunit 4 of the Reche Canyon/Badlands Area Plan) to provide for a wildlife corridor, between the SJWA and the adjacent Badlands to the north."

Implementation of the MSHCP would ensure that impacts to the SJWA remain at a level below significant.

MSHCP Conservation Area Core and Linkage/Wildlife Corridor Impacts and Mitigation

Impacts to MSHCP Cores and Linkages have been assessed based on the location of the Cores and Linkages and the conservation goals for these areas versus the potential for impacts under the proposed land use alternatives. The cores and linkages within the Reche Canyon/Badlands Area Plan include all of Constrained Linkage 8, a large portion of Proposed Core 3, a large portion of Proposed Linkage 4, and a small portion of

Existing Core H as described in the environmental setting portion of this section under the heading "MSHCP Conservation Area Cores and Linkages/Wildlife Corridors."

Constrained Linkage 8

Proposed Constrained Linkage 8 is comprised of upland habitats in the Pigeon Pass Valley and connects two existing Noncontiguous Habitat Blocks in the Box Springs Mountain area. Based on the proposed designation of the northwestern corner of the planning area as Hillside Residential (all alternatives) impacts could occur within the area, which could prevent full achievement of the conservation goals for this linkage. These impacts could be significant. However, application of the mitigation measure identified later in this section that calls for implementation of the MSHCP, would reduce the effects on the MSHCP to a level of less than significant.

Proposed Linkage 4

Proposed Linkage 4 is comprised of upland habitats in Reche Canyon, immediately north of the planning area. It does not overlap the planning area, but MSHCP text indicates that portions of the planning area contribute to the assembly of Proposed Linkage 4. Impacts within this area may interfere with achievement of the conservation goals for this linkage. Nevertheless, significant impacts could occur under build out conditions if the remaining native habitats were lost to residential development. Application of the mitigation measure, identified later in this section, that calls for implementation of the MSHCP, would reduce the effects on the MSHCP to a level less than significant.

Proposed Core 3

Proposed Core 3 (Badlands/Potrero) consists of private lands and some Public/Quasi-Public parcels on the eastern edge of the planning area. It is considered to be of high biological value both as a core and for its multiple linkage functions. Impacts to this area would include loss of native habitats to Rural Residential and Commercial development. These impacts could preclude establishment of the Core, which would be a significant impact. Application of the mitigation measure, identified later in this section, that calls for implementation of the MSHCP, would reduce the effects on the MSHCP to a level less than significant.

Existing Core H

Existing Core H is comprised of Lake Perris SRA, San Jacinto Wildlife Area, private lands and lands with pre-existing conservation agreements (Dudek 2003a). Significant impacts are not anticipated due to the proposed designation of much of the area as Floodplain and the expansion of the San Jacinto Wildlife Area.

Cumulative Impacts

The cumulatively considerable impacts to sensitive species within the planning area are discussed in Section *7.0 Cumulative Impacts* of this EIR.

MITIGATION MEASURES

The following measures have been developed to provide assurances that potential significant biological impacts associated with the implementation of the proposed General Plan Update will be mitigated. Subsequent project-level environmental review could identify more detailed site-specific mitigation measures.

B1. The City and all future public and private development projects within the City shall comply with the Long-term HCP for the Stephen's Kangaroo Rat.

B2. The City shall comply with the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP) and the associated state and federal permits.

B3. Where feasible, projects shall be designed to minimize impacts on sensitive habitat.

B4. Prior to physical disturbance of any natural drainage course or wetland determined to contain riparian vegetation or otherwise qualify as a "jurisdictional" wetland or Non-wetland Water of the U.S., the applicant shall obtain a Streambed Alteration Agreement and/or permit, or written waiver of the requirement for such an agreement or permit, from all resource agencies with jurisdiction over such areas (CDFG and ACOE).

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Less than significant.

NOTES AND REFERENCES

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