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3.11 Biological Resources

This section summarizes key information regarding the biological setting of the HCLE Corridor. For more detailed information, please refer to the Hemet to Corona/Lake Elsinore Corridor Biological Resources Technical Report (LSA, 2002).

3.11.1 Existing Physical Characteristics and Land Uses

The HCLE alternatives traverse the highlands of El Sobrante de San Jacinto, then descend into San Jacinto Valley and Domenigoni Valley. The HCLE corridor alternatives cross several other valley areas; specifically, Eagle, Temescal, Mead, Warm Springs, Perris, San Jacinto, Domenigoni, and Menifee. Other narrow canyons include Walker, Cajalco, Arroyo del Toro, Mockingbird, Cottonwood, and Railroad Canyon. Within the corridor area, the foothills are as high as 760 m (2,500 ft) in elevation. Foothills include areas surrounding Arlington Mountain, Gavilan Peak, Steele Peak, Lakeview Mountains, and Bernasconi Hills.

Due to the minimal to moderate slopes and abundance of alluvial soils in the region, the majority of the flat land in the valleys is under active grain or hay production. The largest area of field cropland is located in the eastern half of the HCLE corridor, in the San Jacinto, Perris, Menifee, and Domenigoni Valleys. The majority of urbanized areas is in cities of Riverside, Corona, Lake Elsinore, San Jacinto, Woodcrest, Perris, Hemet, and in the communities of El Cerrito, Val Verde, Mead Valley, and Canyon Lake. Citrus groves are in El Cerrito, Eagle Valley, and Woodcrest. The citrus groves adjacent to La Sierra Avenue were cleared for development in September and October 2001 (refer to Habitat Fragmentation Figures 1 through 4 in Appendix E that show developed and undeveloped lands within the corridor study area). Maps of the habitat types, land uses, and potential waters of the U.S. in the HCLE corridor alternative areas are provided on Figures 1-20 in Appendix E of this EIS/EIR.

3.11.2 Potential Waters of the U.S. and Associated Habitats

A variety of factors determines whether areas are, or are not, wetlands protected under Section 404 of the federal Clean Water Act. An assessment of the factors requires detailed field surveys as well as the application of regulatory considerations (i.e., interstate commerce nexus). The application or interpretation of the parameters may change over time as new information becomes available or as regulatory interpretations are tested in court or in other arenas. Since a detailed assessment of such parameters is beyond the scope of the Tier 1 review, the EIS addresses all *potential* waters of the U.S. (including all *potential* wetlands). It is likely that a more thorough analysis in accordance with standard jurisdictional delineation methods will reveal that certain waterways do not meet the applicable definitions of waters of the U.S.

3.11.2.1 Alkali Playas

Alkali playas (RCIP vegetation code 460 as shown on maps in Appendix E), which also include alkaline grasslands and alkaline scrub habitat, are found in low-lying sites, such as valley floors and river floodplains, that contain saline and/or alkali soils. The sites are either poorly drained, irregularly flooded, or are in areas where the water table

fluctuates near the ground surface. Plant species include various species of saltbush (*Atriplex* sp.), saltgrass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum*), alkali-mallow (*Malvella leprosa*), and spikerush (*Eleocharis* sp.).

Soils classified within known alkali playa areas in the HCLE corridor are the Traver-Domino-Willows soil series. This soil association occurs in the Salt Creek drainage basin through Winchester Valley and Menifee Valley, and in the San Jacinto River floodplain near San Jacinto, Lakeview, and Perris. The Traver-Domino-Willows series is also mapped between Hemet and the Lakeview Mountains, and westerly to Homeland. Other saline-alkali soils found with the Traver-Domino-Willows soils are in the Chino and Grangeville soil series. The Waukena saline-alkali soil types are found in the floodplain area where the San Jacinto River flows into Lake Elsinore.

3.11.2.2 Vernal Pools

The largest vernal pool (RCIP vegetation code 440) remaining in Southern California is Skunk Hollow, located south of the HCLE corridor, near Murrieta Hot Springs (Erikson & Belk, 1999). Vernal pools also occur with suitable conditions in the Traver-Domino-Willows soils in western Hemet Valley. The Hemet Valley vernal pool complex was identified as an important conservation area during the MSHCP planning process (Dudek & Associates, Inc. 2001c).

Vernal pools were found at two locations within the alternatives during the field surveys conducted in October 2001 (refer to Indicator Soils and Vernal Pools figure in Appendix E).

- **Florida Avenue and Warren Road Intersection west of Hemet (Alternatives 4a, 4c, and 4d)**. One vernal pool, with a basin area of approximately 0.4 ha (1.0 ac) and a watershed area of approximately 40 ha (100 ac), was found northeast of the intersection. The vernal pool is of moderate to high quality, supporting at least two vernal pool indicator plant species (wire-stem popcornflower [*Plagiobothrys leptocladus*] and paradox canary grass [*Phalaris paradoxa*]).

  A vernal pool complex, consisting of many small, shallow, interconnected depressions, was found southwest of the intersection. The area of inundation (vernal pool basin area) of this vernal pool complex may vary greatly year-to-year, depending on rainfall patterns, and during the wettest years may cover nearly the entire area (approximately 8.2 ha [20 ac] within the alternative). This vernal pool complex is of moderate to high quality, supporting at least two vernal pool indicators (graceful hairgrass and alkali plantain [*Plantago elongata*]).

- **Ramona Expressway 2.4 km (1.5 mi) southeast of Lake Perris (Alternatives 1a and 1b).** One vernal pool (basin area of approximately 0.08 ha [0.2 ac]) was found at the north edge of the Ramona Expressway, and a second vernal pool (basin area of 0.13 ha [0.33 ac]) was found at the south edge of the expressway. The two vernal pools are separated by a concrete box culvert under the expressway, and share an approximately 150 ha (370 ac) watershed. The vernal pool north of the expressway supports at least four vernal pool indicator plant species (wire-stem popcornflower, alkali-mallow, smooth boisduvalia [*Epilobium pygmaeum*], spreading navarretia [*Navarretia fossalis*], and paradox canary grass). The vernal pool south of the expressway supports at least three indicator species (wire-stem popcornflower, alkali-mallow, and spreading navarretia).

3.11.2.3 Marsh

Plant species typically found in marshes (RCIP vegetation code 520) were observed in roadside ditches, ponding areas upstream of road culverts, in agriculture ditches, in detention basins, and amongst riparian scrub and forest plant communities in natural stream channels. Native species commonly observed were cattails (*Typha* sp.), flatsedges (*Cyperus* sp.), horseweed (*Conyza canadensis*), tarweed (*Hemizonia* sp.), annual sunflower (*Helianthus annuus*), cocklebur (*Xanthium spinosum*), dock (*Rumex* sp.), and nettle (*Urtica* sp.).

3.11.2.4 Open Waters

Open water (RCIP vegetation code 120) describes larger bodies of water, such as ponds, perennial streams, man-made reservoirs, and recreational lakes. Most lakes and reservoirs include earthen and/or reinforced dams to back water up into comparatively shallow canyonland. Lake shores usually support cattails and bulrush (*Scirpus* spp.). Deep water habitat is generally unvegetated resulting from the lack of light penetration. Floating plants such as duckweed (*Lemna* spp.), water buttercup (*Ranunculus aquatilis*), and mosquito fern (*Azolla filiculoides*) may occur. In weedier situations, vegetation may include introduced species of tamarisk (*Tamarix* spp.). The largest bodies of open water in the project vicinity are Lake Mathews, Lake Elsinore, Lake Perris, Diamond Valley Reservoir, Canyon Lake, and Lee Lake.

Large detention basins and constructed canals within developed areas are also categorized as open waters. Detention basins are adjacent to existing roads where site conditions require capture of surface runoff from agricultural or developed areas. Canals within the corridor include Riverside Canal and Perris Valley storm drain.

3.11.2.5 Streams and Rivers

Numerous upland ephemeral streams originate on the foothill slopes and flow into larger tributaries. Others flow through fields in which agricultural activities have obscured the streambed or are channeled into storm drain systems. Intermittent and perennial streams that support riparian scrub, mature stands of riparian forest, and oak woodland occur within the corridor. Temescal Canyon contains extensive riparian forest that has been impacted by giant reed (*Arundo donax*) infestation. The larger tributaries within the corridor are San Jacinto River, Temescal Creek, Cajalco Creek, Cottonwood Creek, Arroyo del Toro, and Salt Creek.

3.11.2.6 Riversidean Alluvial Fan Sage Scrub

This community (RCIP vegetation code 328) occurs on rarely flooded alluvial deposits along streams of Southern California. Dominant shrubs include scale-broom (*Lepidospartum squamatum*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), California broom (*Lotus scoparius*), chaparral yucca (*Yucca whipplei)*, mule fat (*Baccharis salicifolia*), poison oak (*Toxicodendron diversilobum*), skunkbrush (*Rhus trilobata*), and brittlebrush (*Encelia farinosa*). Scattered trees may include western sycamore (*Platanus racemosa)*,

Southern California black walnut (*Juglans californica*), California juniper (*Juniperus californica*), and Fremont cottonwood (*Populus fremontii*).

3.11.2.7 Riparian Scrub

Riparian habitats in the corridor are associated with intermittent or perennial streams, agricultural runoff, or ponding along roadways. Riparian scrub (RCIP vegetation code 630) generally consists of pure stands of mule fat (*Baccharis salicifolia*). Arroyo willow (*Salix lasiolepis*), narrow leaf willow (*Salix exigua*), or saplings of other riparian tree species may be present in low numbers within the habitat.

3.11.2.8 Riparian Forest

Riparian forest habitat (RCIP vegetation code 610) is sustained by groundwater sources and frequently overflowed lands along rivers and streams. Habitat is dominated by mature willows (*Salix* sp.), and other riparian tree species such as Fremont cottonwood and western sycamore. Understory species are generally shrubby willows and mule fat.

3.11.3 Federal or State Listed Species or Candidates Associated With Aquatic, Wetland, and Riparian Habitats

Listed species are species that are designated as endangered or threatened by the State of California or the Federal government. Proposed status includes species proposed for Federal listing or delisting as threatened or endangered. The State candidate designation is for species proposed for listing as threatened or endangered. Federal "candidate" species are former USFWS Category 1 candidates.

Out of the 164 species proposed to be covered under the MSHCP, 13 listed species are associated with aquatic, wetland, and riparian habitats of western Riverside County (see Table 3.11.A below). The aquatic/wetland/riparian habitats in which they occur are also listed for each species. The species listed with associated habitats are excerpted from data compiled and reported in the Riverside County Integrated Plan Existing Setting Report (LSA, 1999), Preliminary Draft Western Riverside County Multiple Species Habitat Conservation Plan Alternatives Development Document (Dudek & Associates, Inc. 2000), and by the Department of Earth Sciences at University of California-Riverside (University of California 2001).

3.11.4 Critical Habitats of Aquatic and Wetland Species

The following is a description of the extent of critical habitat areas near but outside of the HCLE Corridor (see Figure 3.11.1, Critical Habitat).

Table 3.11.A - Federal or State Listed Species or Candidates Associated with Aquatic, Wetland, and Riparian Habitats Likely to Occur Within the HCLE Corridor

Scientific Name	Common Name	Status	Habitat
Plants			
Ambrosia pumila	San Diego ambrosia	FPE	VP/G
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	FE	VP/AP
Brodiaea filifolia	thread-leaved brodiaea	SE/FT	VP/G
Dodecahema leptoceras	slender-horned spineflower	SE/FE	RS/ALLUVIAL SCRUB
Navarretia fossalis	spreading navarretia	FT	VP/AP
Orcuttia californica	California Orcutt grass	SE/FE	VP
Invertebrates			
Brachinecta lynchii	vernal pool fairy shrimp	FT	VP
Streptocephalus woottoni	Riverside fairy shrimp	FE	VP
Amphibians			
Bufo microscapus californicus	southwestern arroyo toad	FE	R/RS/R AND ADJACENT UPLAND
Birds			
Empidonax traillii extimus	southwestern willow flycatcher	SE/FE	RF
Haliaeetus leucocephalus	bald eagle	SE/FT	OW
Vireo bellii pusillus	least Bell's vireo	SE/FE	RS/ RF
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE	SW

Key: ST state listed as threatened; SE state listed as endangered; FC federal candidate; FT federal listed as threatened; FE federal listed as endangered; and FPE federal proposed for listing as endangered. AP alkali playa; M marsh; G grassland; OW large bodies of open water; R rivers, streams, and adjacent wetlands; RS riparian scrub; RF riparian forest; VP vernal pool; and SW alluvial sandy washes and terraces. Refer to Table 5.C in Appendix E for a complete list of habitat types in which these species are known to occur.

Figure 3.11.1 - Critical Habitat

- **Riverside fairy shrimp.** Critical habitat for the Riverside fairy shrimp is not located within the HCLE corridor. In Riverside County, proposed critical habitat for the Riverside fairy shrimp is located in the Santa Rosa Plateau. Other protected lands where the fairy shrimp occur are part of the Assessment District 161 MSHCP at Skunk Hollow.
- **Southwestern arroyo toad.** Designated critical habitat for arroyo toad does not exist within the HCLE corridor. Critical habitat is designated area within the MSHCP study area in Bautista Creek, in the San Jacinto River between Sand Canyon and Indian Creek, and approximately 24 km (15 mi) south and southeast of the HCLE corridor in San Diego county.
- **Western snowy plover.** Designated critical habitat areas for the snowy plover are only on the Pacific coast, not within Riverside County.
- **Southwestern willow flycatcher.** The areas of the designated critical habitat for the southwestern willow flycatcher in the MSHCP study area are in the Santa Ana River from Prado Dam to the City of Riverside, and in the Santa Margarita River canyon from the coast to the San Diego-Riverside County line.
- **Least Bell's vireo.** Designated critical habitat areas for the vireo in the MSHCP study area are in the Santa Ana River from Prado Dam to the City of Riverside. Another critical habitat area adjacent to the MSHCP study area is located in Santa Margarita River canyon within San Diego County, approximately 8 km (5 mi) south of Riverside County.
- **San Bernardino kangaroo rat.** Final critical habitat designation of the San Bernardino kangaroo rat is not located within the HCLE corridor. In Riverside County, proposed critical habitat for the San Bernardino kangaroo rat is located along the San Jacinto River within about 0.8 km (0.5 mi) of the eastern portion of Alternatives 1a and 1b.

3.11.5 Narrow Endemic Species Associated with Aquatic, Wetland, and Riparian Habitats

Narrow endemic species are found in areas with climatic or soil-based conditions with unique species assemblages, including clay, alkali, volcanic, and sandy soils. The following wetland and riparian plant species are narrow endemics within the HCLE corridor:

3.11.5.1 Endemic to Western Riverside County

- San Jacinto Valley crownscale, FE, saline-alkaline clays, alkali playas.
- Parish's brittlescale (*Atriplex parishii*), saline-alkaline clays, alkali playas.

3.11.5.2 Endemic to Southern California

- Thread-leaved brodiaea, SE/FT, saline-alkaline clays, alkali playas, vernal pools.
- Spreading navarretia, FT, saline-alkaline clays, alkali playas, vernal pools.

- California Orcutt grass, SE/FE, saline-alkaline clays, vernal pools.
- San Diego ambrosia, FPE saline-alkaline clays, alkali playas.
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) saline-alkaline clays, alkali playas.
- Smooth tarplant (*Hemizonia pungens* ssp. *laevis*), saline-alkaline clays, alkali playas.
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) saline-alkaline clays, alkali playas.
- Little mousetail (*Myosurus minimus* ssp. *apus*), saline-alkaline clays, vernal pools.
- Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), alkaline soils.

3.11.6 Non-Listed Sensitive Species Associated with Aquatic, Wetland, and Riparian Habitats

Sensitive species are not listed, proposed, or candidates, but are considered "species of special concern" by one or several government natural resource agencies and private conservation organizations, including Bureau of Land Management, U. S. Forest Service, California Forestry and Fire Protection, Partners in Flight, Western Bat Working Group, and California Native Plant Society. Federal species of special concern is a term used for former Category 2 candidate species.

Refer to Table 5.F in Appendix E for a summary of non-listed sensitive species and their associated habitats within the HCLE Corridor.

3.11.7 Upland Habitat

The upland habitats within the HCLE Corridor are nonnative grasslands, coastal sage scrub, chaparral, oak woodland, and juniper woodland plant communities. Croplands, dairy, livestock feed yards, orchards, and developed areas are also found throughout the corridor.

3.11.7.1 Nonnative Grassland

Nonnative grasslands (RCIP vegetation code 422) consist of dense to sparse covers of annual grasses with flowering culms 0.2-0.5 m high. This community is often associated with numerous species of native annual wildflowers, especially in years of favorable rainfall. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds (Holland, 1986).

Nonnative grassland species within the corridor include red brome (*Bromus madritensis rubens*), common ripgut grass (*Bromus diandrus*), wall barley (*Hordeum murinum*), Mediterranean schismus (*Schismus barbatus*), slender wild oats (*Avena fatua*), and shortpod mustard.

3.11.7.2 Riversidean Sage Scrub

Coastal sage scrub is not a homogenous vegetation type, but rather a group of shrubland vegetation types found under similar climatic conditions and exhibiting similar growth patterns. Coastal sage scrub extends latitudinally from the San Francisco Bay region southward to El Rosario in Baja California. Several associations of coastal sage scrub have been recognized based upon its vegetative composition throughout its geographic range. Four floristic associations within coastal sage scrub are recognized: Diablan, Venturan, Riversidean, and Diegan. These associations occur in reasonably distinct geographical areas along the coastline, with the Riversidean association occupying a more-inland location characterized by higher evapotranspirative stress during the summer (O'Leary 1990[1]). Riversidean sage scrub occurs throughout the western Riverside basin between the Santa Ana Mountains and the San Jacinto Mountains (PSBS, et. al. 1995[2]).

Riversidean sage scrub (RCIP vegetation code 327) is scattered primarily along foothills and valleys along the corridor and consists of various densities and species diversity. Sage scrub is often distributed in patches throughout its range and can be found in diverse habitat mosaics with other plant communities, particularly grassland, chaparral, and oak/riparian woodland. Within the alternative bandwidths, Riversidean sage scrub is found as a part of large contiguous blocks and interspersed with nonnative grasslands and chaparral.

The Riversidean sage scrub community within the corridor consists predominantly of California buckwheat, California sagebrush, brittlebrush, white sage (*Salvia apiana*), and black sage (*Salvia mellifera*). The Riversidean sage scrub plant community typically has an extensive understory of nonnative grassland species, including red brome, wall barley, Mediterranean schismus, slender wild oats, and shortpod mustard.

3.11.7.3 Chaparral

Chaparral (RCIP vegetation code 370) is a shrub-dominated habitat that is composed largely of evergreen species that range from 1 to 4 m (3.3 to 13 ft) in height. The most common and widespread species within chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), wild lilac (*Ceanothus* spp.), oak (*Quercus* spp.), redberry (*Rhamnus* spp.), laurel sumac (*Malosma laurina*), mountain-mahogany (*Cercocarpus betuloides*), toyon (*Heteromeles arbutifolia*), and mission manzanita (*Xylococcus bicolor*) (Holland 1986). Soft-leaved subshrubs are less common in chaparral than in coastal sage scrub, but occur within canopy gaps of mature stands. Common species include California buckwheat, sages

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[1] O'Leary, J.F. 1990. Californian coastal sage scrub: general characteristics and considerations for biological conservation. Pages 24-39 *in* A.A. Schoenherr, ed. Endangered Plant Communities of Southern California. Special Publication No. 3, Southern California Botanists, Claremont, California.

[2] Pacific Southwest Biological Services, KTU & A, and Tierra Madre Consultants, Inc. 1995. Western Riverside County Multi-species Habitat Conservation Plan: Phase I - Information Collection and Evaluation. Prepared for Western Riverside County Habitat Conortium, Riverside, California.

(*Salvia* spp.), California sagebrush, and monkeyflower (*Mimulus* spp.) (Sawyer and Keeler-Wolf 1995).

3.11.7.4 Oak Woodland

Oak woodlands (RCIP vegetation code 710) consist of open to locally dense evergreen riparian woodlands dominated by coast live oak (*Quercus agrifolia*). This community is typically found on north-facing slopes and shaded ravines in the south and more exposed sites in the north. The shrub layer is poorly developed but the herb component is continuous and dominated by nonnative grasses, particularly common ripgut grass. This plant community intersperses with coastal scrub and upper Sonoran mixed chaparral on drier sites, and with coast live oak forest or mixed evergreen forest on moister sites (Holland 1986).

3.11.7.5 Croplands

Field croplands (RCIP vegetation code 111) are agricultural activities primarily consisting of grain or hay production and are predominantly located in the northern half of the HCLE corridor (in the Perris, Menifee, Domenigoni, Paloma, and French valleys). The majority of the vernal pools (see Special Aquatic Sites habitat types) were found in existing croplands.

3.11.7.6 Grove/Orchard

Orchard/grove areas (RCIP vegetation code 112) predominantly consist of citrus, avocado, and grape, with sparse native and nonnative vegetation present. Topography may consist of relatively steeply sloping lands; although, generally described as mildly sloping terrain with loamy soils. Channels and narrow wetlands may exist due to irrigation run-off resulting in weedy riparian understory elements such as mule fat scrub and sporadic willows.

3.11.7.7 Dairy

Dairyland terrain (RCIP vegetation code 113) is generally level with fertile, relatively deep loamy soils often mapped as nonnative grasslands. As such, land usually features highly disturbed nonnative grasslands consisting of heavily fertilized pastures of Eurasian grasses. Floodplains are often utilized, incorporating some weedy seasonally present wetlands.

3.11.7.8 Developed

Developed areas (RCIP code 130) include areas where natural vegetation has been largely destroyed by human activity other than agriculture, including land covered by ornamental landscaping, concrete, asphalt, buildings, lawns, escaped exotic/nonnative plant species, golf courses, etc., as well as areas cleared of vegetation or otherwise significantly disturbed by machinery.

3.11.8 Federal or State Listed Species or Candidates Associated with Upland Habitats

Out of the 164 species proposed to be covered under the MSHCP, seven state or federally listed as endangered or threatened species are associated with upland habitats within the HCLE corridor study area and are listed in Table 3.11.B below.

Table 3.11.B - Federal or State Listed Species or Candidates Associated With Upland Habitats Likely to Occur Within the HCLE Corridor

Scientific Name	Common Name	Status	Habitat
Allium munzii	Munz's onion	ST/FE	CSS/CH/G
Berberis nevinii	Nevin's barberry	SE/FE	CH
Euphydryas editha quino	Quino checkerspot butterfly	FE	CSS/CH/G/O/VP
Buteo swainsoni	Swainson's hawk	ST	G/CR
Charadrius montanus	Mountain plover	FPT	G/CR/O
Polioptila californica	Coastal California gnatcatcher	FT	CSS
Dipodomys stephensi	Stephen's kangaroo rat	ST/FE	CSS/G

Note: ST state listed as threatened; SE state listed as endangered; FT federal listed as threatened; FE federal listed as endangered; and FPE federal proposed for listing as endangered. CSS coastal sage scrub; G grassland; CH chaparral; O oak woodland; CR cropland; and VP vernal pool. Refer to Table 5.C in Appendix E for a complete list of habitat types in which these species are known to occur.

Species descriptions and their locations relative to the HCLE Corridor are provided in the Biological Resources Technical Report (LSA, 2002).

3.11.9 Critical Habitats of Upland Species

The HCLE corridor study area is within designated critical habitat areas for the California gnatcatcher and for the Quino checkerspot butterfly. The HCLE corridor is within the HCP reserve lands for the Stephen's kangaroo rat (see Figure 3.11.1, Critical Habitat).

- **Coastal California Gnatcatcher.** Designated critical habitat for the gnatcatcher in Riverside County is primarily within the foothills and other areas with coastal sage scrub habitat within the Riverside lowland bioregion (USFWS 2000b). Gnatcatcher critical habitat is located throughout the HCLE corridor, specifically in areas surrounding the Gavilan hills, Steele Peak, Railroad Canyon, Double Butte, Lakeview Mountains, and south of Lake Perris.
- **Quino Checkerspot Butterfly.** In the HCLE corridor, the designated critical habitat areas for the butterfly encompass primarily lands surrounding Lake Mathews (USFWS 2001).
- **Stephen's Kangaroo Rat HCP Reserve.** The Stephen's kangaroo rat reserve exists within the HCLE corridor primarily in around Lake Mathews, Lake Perris, Steele Peak, and Diamond Valley Lake.

3.11.10 Narrow Endemic Species Associated with Upland Habitats

Narrow endemic species are found in areas with climatic or soil-based conditions with unique species assemblages, including clay, alkali, volcanic, and sandy soils. Below is a listing of species by the extent of the species range and location relative to the HCLE corridor.

3.11.10.1 Endemic to Western Riverside County

C Munz's onion, ST/FE, heavy clay soils.

3.11.10.2 Endemic to Southern California

- Nevin's barberry, ST/FE, coarse soils, gravelly wash margins.
- Many-stemmed dudleya, clay soils.
- San Miguel savory (*Satureja chandleri*), rocky, gabbroic and metavolcanic substrates.

3.11.11 Non-Listed Sensitive Species Associated with Upland Habitats

Non-listed sensitive species are those species that are not Federal or State listed as threatened or endangered, but are considered rare or sensitive species by various State, Federal, or private organizations. The CDFG, USFWS, local agencies, and special interest groups such as the California Native Plant Society (CNPS) publish watch-lists of declining species; these lists often describe the general nature and perceived severity of the decline. The records of non-listed sensitive species were obtained from the Preliminary Draft Western Riverside County Multiple Species Habitat Conservation Plan Alternatives Development Document (Dudek & Associates, Inc., 2000) and the RCIP Existing Setting Report (LSA, 1999).

Refer to Table 5.F in Appendix E for a summary of non-listed sensitive of species and their associated habitats within the HCLE Corridor study area.

3.11.12 Western Riverside County MSHCP Proposed Reserve

3.11.12.1 Criteria-Based Plan for Proposed Reserve Areas

The criteria-based approach for the MSHCP assumes conservation within the existing public/quasi-public lands comprising approximately 144,478 ha (357,000 ac) in MSHCP Alternative 1, and development of criteria to assure additional conservation on private lands of approximately 61,919 ha (153,000 ac) in MSHCP Alternative 1. The additional conservation lands will be selected from within the criteria area boundary. The criteria area boundaries were selected to provide an organizational framework for the criteria. While these boundaries are not biologically based, they relate specifically to County planning area boundaries and to the jurisdictional boundaries of incorporated cities. Use of the Area Plan framework for the criteria-based approach should facilitate structuring implementation strategies around established planning boundaries.

3.11.12.2 Proposed Reserve Areas Within the HCLE Corridor

Below is a description of the proposed reserve areas and linkages within the HCLE Corridor and a listing of the species addressed by each proposed conservation area (see Figure 3.11.2).

San Jacinto River Middle Reach Linkage. This linkage follows the San Jacinto River between Lakeview and Soboba Hot Springs. It is bounded by Gilman Springs Road (SR-79) to the north and east, and by Lakeview to the south. The linkage is interrupted by Lake Perris on the west and then continues southwest toward Canyon Lake, where it meets the Lower San Jacinto River/Canyon Lake area. Species present include mountain plover (winter) ferruginous hawk, horned lark, burrowing owl, black-tailed jackrabbit brush rabbit, coyote, desert woodrat, Stephen's kangaroo rat, badger (potential) bobcat, California pocket mouse, long-tailed weasel, Los Angeles pocket mouse, mountain lion, San Diego pocket mouse, southern grasshopper mouse, San Diego horned lizard, leopard lizard, arroyo southwestern toad, granite spiny lizard, orange-throated whiptail, pond turtle, glossy snake, San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, smooth tarplant, Coulter's goldfields, spreading navarretia, and Wright's trichicoronis.

Hemet Vernal Pools. This area is bounded by Juniper Flats and Homeland to the west, Winchester to the south, Hemet to the east, and the San Jacinto River Middle Reach Linkage to the north. Species present include burrowing owl (potential), badger (potential), black-tailed jackrabbit (potential), coyote (potential), long-tailed weasel (potential), southern grasshopper mouse (potential), Stephen's kangaroo rat (potential), orange-throated whiptail, Munz's onion, San Jacinto Valley crownscale (Salt Creek), Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea (Salt Creek), smooth tarplant (Salt Creek), Coulter's goldfields (Salt Creek), little mousetail (Salt Creek), spreading navarretia, California orcutt grass (Salt Creek and Skunk Hollow).

Lakeview Mountains Habitat Block. This area encompasses Juniper Flats. It is bounded by Lakeview to the north, Nuevo to the west, Homeland to the south, and the Hemet Vernal Pools area to the east. Present species include ferruginous hawk, cactus wren, horned lark, burrowing owl, merlin, turkey vulture, badger, black-tailed jackrabbit, bobcat, brush rabbit, coyote, San Diego pocket mouse, Stephen's kangaroo rat, California pocket mouse (potential), desert woodrat (potential), long-tailed weasel (potential), Los Angeles pocket mouse (potential), mountain lion (potential), southern grasshopper mouse (potential), rosy boa, San Diego horned lizard, granite spiny lizard, orange-throated whiptail, and Parry's spineflower.

Badlands/Potrero Core Area. The Badlands/Potrero Core area lies on the north side of Gilman Springs Road, adjacent to the San Jacinto River Middle Reach Linkage. Species

Figure 3.11.2 - MSHCP Criteria Area

present include golden eagle, cactus wren, sage sparrow, loggerhead shrike, rufus-crowned sparrow, badger, black-tailed jackrabbit, bobcat, brush rabbit (potential), coyote, San Diego pocket mouse, Stephen's kangaroo rat, California pocket mouse (potential), desert woodrat, long-tailed weasel, Los Angeles pocket mouse, mountain lion (potential), southern grasshopper mouse (potential), spadefoot toad, legless lizard, rosy boa, red-diamond rattlesnake, banded gecko, ringneck snake, San Diego horned lizard, arroyo toad, granite spiny lizard, orange-throated whiptail, Parry's spineflower, and smooth tarplant.

Sedco Hills/Wildomar Linkage. The Sedco Hills/Wildomar Linkage lies north I-15 and encompasses Sedco Hills and Wildomar. It is bounded on the north by the Estelle Mountain/Meadowbrook Linkage, and on the south by the French Valley Core area and I-215. Its northeast corner meets the Lower San Jacinto River/Canyon Lake area. This habitat linkage is critical for California gnatcatcher conservation. Other species of interest are Bell's sage sparrow, rufous-crowned sparrow, grasshopper sparrow, golden eagle (nesting), northern harrier, loggerhead shrike, white-faced ibis, Stephen's kangaroo rat, black-tailed jackrabbit, San Diego pocket mouse, desert wood rat, bobcat, southern grasshopper mouse, California newt, San Diego horned lizard, spadefoot toad, red-diamond rattlesnake, orange-throated whiptail, Quino checkerspot butterfly, Riverside fairy shrimp, rainbow manzanita, and long-spined spine flower.

Estelle Mountain/Meadowbrook Linkage. This linkage lies to the north of and parallel to I-15 between Sedco Hills and Meadowbrook. It connects to the following core areas and linkages: Sedco Hills/Wildomar Linkage to the southeast; Lake Elsinore Wetlands area to the southwest; the Alberhill Habitat Block to the northwest; the Temescal Wash Linkage to the northwest; the Gavilan Hills/Gavilan Plateau Linkage to the northeast; and the Lower San Jacinto River/Canyon Lake area to the east. Species present include California gnatcatcher, Bell's sage sparrow, yellow warbler, yellow-breasted chat, downy woodpecker, least Bell's vireo, grasshopper sparrow, rufous-crowned sparrow, Stephen's kangaroo rat, black-tailed jackrabbit, San Diego pocket mouse, desert woodrat, bobcat, badger, southern grasshopper mouse, brush rabbit, coyote, mountain lion, spiny lizard, rosy boa, spadefoot toad, San Diego horned lizard, red-diamond rattlesnake, orange-throated whiptail, Munz's onion, Parry's spineflower, long-spined spineflower, many-stemmed dudleya, and California spineflower. This area is critical for the California gnatcatcher.

Gavilan Hills/Gavilan Plateau Linkage. This area lies northwest of SR-74 and northeast of I-15, and encompasses Good Hope and Gavilan Hills. It connects to the following core areas and linkages: the Estelle Mountain/Meadowbrook Linkage to the south; and the Gavilan Hills Core Area to the east. Species present include Bell's sage sparrow, rufous-crowned sparrow, Stephen's kangaroo rat, black-tailed jackrabbit, San Diego pocket mouse, desert woodrat, bobcat, badger (potential), southern grasshopper mouse, coyote, mountain lion, arroyo southwestern toad (potential), orange-throated whiptail, ringneck snake, leggless lizard, long-nosed leopard lizard, San Diego horned lizard, rosy boa, red-diamond rattlesnake, two-striped garter snake, granite spiny lizard, spadefoot toad, Quino checkerspot butterfly, Munz's onion, Davidson's saltscale, rainbow manzanita, Payson's jewelflower, peninsular spineflower, Parry's spineflower, long-spined spineflower, small-flowered morning glory, many-stemmed dudleya, smooth tarplant, California muhly, little mousetail, Englemann oak, and Coulter's matilija poppy. This area is important for Quino checkerspot butterfly conservation.

Alberhill Habitat Block. The Alberhill area is north of Lake Elsinore and south of I-15 between Lake Elsinore and Glen Ivy Hot Springs. It overlaps the southwest end of the Temescal Wash Linkage. Species present include Bell's sage sparrow, rufous-crowned sparrow, California gnatcatcher, Stephen's kangaroo rat, black-tailed jackrabbit, San Diego pocket mouse, desert woodrat, bobcat, badger, southern grasshopper mouse, coyote, bobcat, mountain lion, arroyo toad, orange-throated whiptail, ringneck snake, legless lizard, long-nosed leopard lizard, San Diego horned lizard, rosy boa, red-diamond rattlesnake, two-striped garter snake, granite spiny lizard, spadefoot toad, Quino checkerspot butterfly, Munz's onion, San Diego ambrosia, San Jacinto Valley crownscale, long-spined spineflower, many-stemmed dudleya, and Coulter's goldfields. It is the only major California gnatcatcher location west of I-15 that provides protection for catastrophic/stochastic events, such as a fire, with I-15 as a possible fire barrier.

Chino Hills Constrained Linkage. This narrow linkage meets the Temescal Wash Linkage at its northwest tip, near the junction of SR-91 and I-15. It extends north and west to the Prado Lake Basin. Species present in the linkage to Chino Hills include golden eagle (nest sites), least Bell's vireo, pond turtle, banded gecko, spadefoot toad, granite spiny lizard, two-striped garter snake, red-diamond rattlesnake, rosy boa, San Diego horned lizard, orange-throated whiptail, and California black walnut.

La Sierra Hills. The La Sierra Hills area lies between Home Gardens and El Cerrito on the north and south, respectively. It is east of the northern tip of the Temescal Wash Linkage, and west of Lake Mathews.

Indian Canyon Linkage. The Indian Canyon Linkage is a narrow area extending southwest from the Temescal Wash Linkage and Lake Lee at I-15. Species present include mountain quail (migrating), various species of raptor, coyote, bobcat, mountain lion (potential), mule deer, black-tailed jackrabbit, San Diego pocket mouse, desert woodrat, spadefoot toad, orange-throated whiptail, Munz's onion, and peninsular spineflower. This is a key linkage between Lake Mathews, Estelle Mountain, and the Cleveland National Forest, with a focus on maintenance of wildlife movement.

Bedford Canyon Linkage. The Bedford Canyon Linkage is a narrow area that cuts an east-west path across the Temescal Wash Linkage at El Cerrito. Species present include coyote, San Diego horned lizard, spiny lizard, pond turtle, spadefoot toad, red-diamond rattlesnake, legless lizard, and orange-throated whiptail.

Temescal Wash Linkage. The Temescal Wash Linkage is a large area that runs east of and parallel to I-15 between Meadowbrook to the south and the SR-91/I-15 interchange to the north, where it connects to the southernmost tip of the Chino Hills Constrained Linkage. Other adjacent core areas and linkages include the Alberhill Habitat Block, the Estelle Mountain/Meadowbrook Linkage, and the Gavilan Hills/Gavilan Plateau Linkage, all at the southern tip of the area. The northeast end of the Indian Canyon area joins the Temescal Wash Linkage at I-15, near Lee Lake. The Bedford Canyon Linkage cuts east-west across the Temescal Wash Linkage near El Cerrito. Species present include mountain quail (migrating), various species of raptor, coyote, bobcat, mountain lion (potential), mule deer, black-tailed jackrabbit, San Diego pocket mouse, desert

woodrat, spadefoot toad, orange-throated whiptail, Munz's onion, and peninsular spineflower. This is a key linkage between Lake Mathews, Estelle Mountain, and the Cleveland National Forest, with a focus on maintenance of wildlife movement.

Double Butte Habitat Block. The Double Butte Habitat Block lies south of Florida Avenue (SR-74), west of Winchester Road (SR-79), north of Winchester, and east of Romoland.

Gavilan Hills Core Area. This area lies east of the Gavilan Hills/Gavilan Plateau Linkage, west of I-215, north of SR-74, and south of Mead Valley.

Lake Elsinore Wetlands. This area lies west of I-15 and east of Lakeland Village. It connects to the Sedco Hills/Wildomar and Estelle Mountain/Meadowbrook Linkages. Various species of waterfowl and other wetland species are present.

Lower San Jacinto River/Canyon Lake. This area encompasses Canyon lake and is bounded by the Sedco Hills/Wildomar and Estelle Mountain/Meadowbrook Linkages on the south, and by the San Jacinto River Middle Reach Linkage on the north. The area facilitates movement of wetland species of wildlife.

French Valley Core Area. The large block of habitat generally east of I-215 and south of Scott Road and north of Clinton Keith Road, which surrounds Warm Springs Creek, Tucalota Creek, Santa Gertrudis Creek, and other unnamed drainages. This area is proposed primarily for conservation of the Quino checkerspot butterfly and California gnatcatcher. It is also important to narrow endemic plant species: Parish's brittlescale, Munz's onion, California orcutt grass, and spreading navarretia.

3.11.12.3 Public/Quasi-Public Lands

Salt Creek Constrained Linkage. Salt Creek is maintained by Riverside County Flood Control and Water Conservation District (RCFCWCD) and is an earthen diked channel barely within the HCLE corridor. Willow and Domino soil series were mapped in the floodplain of Salt Creek. Narrow endemic plant species may still occur within the flood control channel. Species that potentially may occur within the Salt Creek drainage from the San Jacinto Valley to Domenigoni Valley are San Jacinto Valley crownscale, Davidson's saltscale, Parish's brittlescale, little mousetail, California Orcutt grass, and spreading navarretia.

Southwestern Riverside County Multiple Species Reserve. The reserve includes lands surrounding Lake Skinner and Diamond Valley Reservoir. Key planning species are bobcat, coyote, mountain lion, California gnatcatcher, and Quino checkerspot butterfly. Additional land acquisitions south and east of the reserve would provide for habitat connectivity from French Valley through Sage to Wilson Creek core habitat areas.

Riverside County Habitat Conservation Agency Reserves. Core reserve areas dedicated as part of the Stephen's kangaroo rat habitat conservation plan included the San Jacinto, Lake Mathews, Steele Peak, Motte Reserves, and miscellaneous parcels owned by the Bureau of Land Management near the Gavilan Hills area.