

3. Antelope Valley SEA

Location

General

The Antelope Valley Significant Ecological Area (SEA) is located in the central portion of the Antelope Valley, primarily east of the cities of Palmdale and Lancaster, within a predominantly unincorporated area of the County. The SEA is focused on the principal watercourses of the area: Little Rock Creek and Big Rock Creek and tributaries, such as Mescal Creek. The California Audubon recognizes the area of Edwards Air Force Base as a Globally Important Bird Area (IBA), which is visited by tens of thousands of migrant birds during the spring and fall migratory seasons, and supports the breeding of rare and endangered birds during the spring and summer months.

The SEA is located, at least partially, in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Rosamond, Rosamond Lake, Redman, Rogers Lake S, Jackrabbit Hill, Lancaster E, Alpine Butte, Hi Vista, Adobe Mountain, Palmdale, Littlerock, Lovejoy Butte, El Mirage, Pacifico Mountain, Juniper Hills, Valyermo, and Mescal Creek.

General Boundary and Resources Description

Watercourses and water features, such as dry lakes and springs, are the focus for desert life and central to connectivity and biodiversity in this region. The SEA was delineated to emphasize the importance of the Little Rock Creek and Big Rock Creek watersheds to the surface and subsurface hydrology of the Antelope Valley and to the dry lakes. The western portion of the SEA extends along the margin of Little Rock Creek Wash and floodplain zone, while the eastern margin follows a tributary of Big Rock Creek, which is Mescal Creek Wash and its tributaries. The origins of the watercourses in the Angeles National Forest are an important aspect of their diversity and connectivity, and the importance of the diverse forest vegetation of this SEA is discussed below. The SEA includes several major buttes and numerous minor ones, which have highly diverse biota along with diverse desert habitats, which range from sand dunes from the wind-blown dust that the buttes collect, to rocky crags, which are home to various raptors. The SEA includes the County's portion of the watershed basin for dry lakes, which are the destination for the watercourses. There are three dry lakes and their adjacent plains (protected as part of Edwards Air Force Base) included in the SEA: Rosamond Dry Lake with the adjacent Piute Ponds, Buckhorn Lake, and Rogers Lake. These lakes and ponds are often flooded during the rainy winter-spring seasons, and are the principal resting areas on the Pacific Flyway. The northeastern portion of the SEA encompasses some agricultural cropland (some of which lie fallow) and dispersed rural residential uses; however, the underlying hydrology of the washes remains intact throughout the entire SEA.

Three main watercourse segments originate in the San Gabriel Mountains and flow through the Antelope Valley to dry lakes near the northern County boundary: 1) Little Rock Creek; 2) Big Rock Creek; and 3) Desert-Montane. Desert-Montane centers on Mescal Creek and includes adjacent drainages. The

flows of all three drainages may be on the surface during rain and snowmelt, and are subsurface for much of the year.

The Little Rock Creek segment (the westernmost segment), goes north from Little Rock-Palmdale Dam as its southern barrier. Upstream from the reservoir is critical habitat for the endangered arroyo toad (*Anaxyrus californicus* FE, SSC). The toad could occur from time to time in the downstream area of the SEA. Heading north to Mount Emma Road, the boundaries follow the flood zone of the Little Rock Creek Wash and also incorporate some of the vegetated slopes that drain to the wash. North from Mount Emma Road, the boundaries follow Federal Emergency Management Agency (FEMA) boundaries except where the braiding is clearly outside of the FEMA boundary, such as near Avenue U, between Avenue S and Avenue T, and north of Avenue Q. In these areas, the line follows the edge of the braiding. North of Avenue M, the lines follow FEMA boundaries to Avenue F. On the west side, just south of Edwards Air Force Base, the SEA boundary heads west to incorporate the conservation area identified by the West Mojave (WEMO) Plan for alkali mariposa lily. North of Avenue F, the eastern boundary follows the FEMA boundary to the Edwards Air Force Base boundary.

All of Edwards Air Force Base that is in the County is included in the SEA because of the restricted entry and use protect the dry lakes and their neighboring areas. Many desert plants and wildlife species once found broadly across the Antelope Valley are now found only or primarily within Edwards Air Force Base. The ponds and dry lakes have distributed habitat of marshy alkali grassland, alkali flats, and cattail and bulrush marsh augmented by wastewater treatment facilities that have additional ponds. Some of the nesting rare and uncommon birds include white-faced ibis (*Plegadis chihi*), tricolored blackbird (*Agelaius tricolor*), redhead (*Aythya americana*), gadwall (*Anas strepera*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), least bittern (*Ixobrychus exilis*), and federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*).

The Big Rock Creek area has western and eastern segments in the SEA. On the western segment, the SEA begins in the Angeles National Forest near its northern boundary and heads north through and out of the Angeles National Forest along Pallett Creek. The SEA includes parts of Cruthers and Holmes creeks near their junctions with Pallett Creek. SEA boundaries follow the braided stream channel toward the confluence with Big Rock Creek. From the aqueduct at Big Rock Creek to Edwards Air Force Base, the western boundary line follows the FEMA boundaries along the western side of Big Rock Creek braids, including Alpine Butte, and joining to the Little Rock Creek segment along Edwards Air Force Base. On the east segment of Big Rock Creek, the SEA boundaries head north from the Angeles National Forest headwaters of Dorr Canyon (a Big Rock Creek tributary) and the headwater area of Big Rock Creek near State Route-2. The boundaries travel through the Angeles National Forest and follow the wash area of the streams toward the confluence with Pallett Creek. The Angeles National Forest floodplain of the widened area of South Fork of Big Rock Creek is included in the SEA.

South Fork of Big Rock Creek is part of the federally-designated critical habitat of the mountain yellow-legged frog (*Rana muscosa*, FE, SE). This frog is known in the County from only a few high-mountain streams in the San Gabriel Mountains. Climate change and other global factors, such as air pollution, are suspected to be responsible for its endangered status.

Another broad area of the San Andreas Fault Zone near the Valyermo Ranch follows the FEMA boundaries and includes a nesting area for gray vireos near Bobs Gap. Between the Angeles National Forest and the aqueduct, the SEA boundaries follow FEMA boundaries. The eastern boundary follows the FEMA boundary along the main course of Big Rock Creek to the vicinity of Avenue Q East, where it diverges to include sections that have the main area of Lovejoy Buttes. At Avenue O, the eastern boundary returns to the FEMA boundary, and continues northeastward along the FEMA boundary to skirt development in Lake Los Angeles. In the vicinity of Avenue M, the eastern boundary goes eastward through areas of natural vegetation (from about 100th Street to 215th Street) to include Rocky, Piute, and Saddleback buttes, and connect with the Desert-Montane transect segment.

The southern side of the Desert-Montane transect branch starts in the Angeles National Forest along the ridge of Table Mountain at the San Bernardino-Los Angeles County line. Table Mountain is known for its very diverse flora, which includes desert and mountain elements, and some unusual limestone-obligate species. The ridgeline SEA southern boundary gradually becomes the western boundary as it skirts the camp developments along the southern base of Table Mountain. The boundary turns north along the western ridge of the Mescal Creek drainage, crossing the California Aqueduct with the State Route-138. The Mescal Creek flora is known to be highly diverse, and the SEA boundaries include much of the Inface Bluff on the west side of Mescal Creek, which adds further diversity to Mescal Creek habitats. From the aqueduct to Avenue R, the western boundary buffers the westernmost desert drainage by 200 feet, which protects the braided area of the watercourse. This part of the SEA includes Black Butte and the Three Sisters (buttes), many smaller unnamed buttes, as well as Mescal and Theodore Payne County wildlife sanctuaries. The east side of the transect is the San Bernardino-Los Angeles County line. At about Avenue U East, the eastern boundary veers off the San Bernardino-Los Angeles County line to the north-northwest, buffering the Puzzle Creek watercourse by about 200 feet, which protects the braiding of the easternmost drainages. Near Avenue R, the boundary trends north, and goes north-northwest near Avenue P to include Moody Butte, lesser unnamed rises, and Blue Rock Butte.

The Desert-Montane segment largely avoids drainages that flow into and out of the Lake Los Angeles community, but the transect includes diffuse watercourses on the south side of Saddleback Butte, Saddleback Butte and the surrounding Saddleback Butte State Park, the Antelope Valley Indian Museum State Park at the base of Piute Butte, and Piute Butte. At about Avenue H and 70th Street East, the boundary turns to the northeast following natural vegetation to the County boundary near Avenue C. Here the boundary turns north along the line to where San Bernardino, Kern and Los Angeles counties meet. This northeastern part of the SEA has WEMO conservation areas for the threatened desert tortoise and state-threatened Mojave ground squirrel. The northeastern area has some BLM land and the County Phacelia Wildlife Sanctuary, which is also County Wildflower Preserve A. The SEA includes large parts of County Wildflower Preserve F.

On Edwards Air Force Base, north to south between Avenues B and E East, and west to east between 140th Street East and the San Bernardino-Los Angeles County line, there is federally-designated critical habitat for the state and federally-threatened desert tortoise (*Gopherus agassizii*). At 190th Street, the critical habitat widens to extend north beyond the County and the SEA into Kern County. At 200th Street, the critical habitat widens to the south to extend to Avenue H and then goes east across the San

Bernardino-Los Angeles County line. The desert tortoise critical habitat area on Edwards Air Force Base is included in the SEA, and much of the SEA area north of Avenue H in the eastern drainages of the SEA is designated critical habitat for the tortoise.

The SEA traverses the Antelope Valley from the foothills of the San Gabriel Mountains, to the low elevations of the dry lake basins, and its expanse and considerable topographical relief is reflected in its relatively high floral and faunal diversity. The SEA includes playa lake, alkali marsh, alluvial fan scrub, a mosaic of xeric desert scrubs, Joshua tree woodland, desert riparian woodlands, juniper scrub, pinyon pine, chaparral and mixed conifer, oak, and riparian communities of higher elevations. Transitional zones (ecotones) between these communities often contain unusual species compositions, such as pinyon pine, juniper and Joshua trees together, or Joshua trees adjacent to cottonwood forest.

Edwards Air Force Base has the only good stands of mesquite (*Prosopis glandulosa*) remaining in the County. It has areas of Mojave spineflower (*Chorizanthe spinosa*), creosote bush scrub, alkali sink, and the transition vegetation between the two. Rosamond Lake has the best example of the shadscale scrub and alkali sink biotic communities in the County. Shadscale scrub needs heavy soil with underlying hardpan between 3000-6000 feet elevation, which is unusual in the County, and more common in the north Mojave Desert and Owens Valley. In addition, the playa has the southernmost extension of the Great Basin kangaroo rat (*Dipodomys microps*), which is an isolated geographic population of scientific interest.

The southernmost portions of the three “legs” of the SEA lie within the Angeles National Forest, and include the upper tributary watersheds and streams for Little Rock, Big Rock, and Mescal creeks. These areas support the mixed conifer, which are multi-species oak woodlands that are common to the middle-elevation zones on the north face of the San Gabriel Mountains. The creeks are higher energy systems at those elevations, as they collect water from the surrounding terrain, and are typically lined with woodlands of alder, willow, sycamore and cottonwood, with varying densities and with various compositions of species.

As the creeks drop north of the pressure ridges of the San Andreas Fault Zone, they lose gradient and widen, and most of the flow is beneath the surface, except during high energy storms or in the spring (depending upon rainfall totals in the watersheds). The vegetation becomes more sparse and less evenly distributed along the channel margins. Crossing the lowlands of the Antelope Valley, the channels support a variety of desert scrub vegetation within the alluvial plains. Where the alluvial plains are wide and shallow, cottonwood-willow woodland and sycamore woodland vegetation communities often occur within the overall floodplain on stable terraces; around oxbow flow zones in the Antelope Valley; or where the groundwater table is replaced or augmented by agricultural runoff. The surrounding upland habitats are primarily desert scrubs, including creosote and chenopod scrubs, sand sheets (chiefly around the buttes), and Joshua tree woodland. Intact Joshua tree woodland, with native substrates present, supports a relatively high diversity of annual wildflowers, reptiles and mammals. The Joshua trees also provide nest sites for many desert and migratory bird species.

Lovejoy, Alpine, Piute, Black and Saddleback buttes, along with other, smaller unnamed buttes, form most of the topographical relief within the SEA. These areas offer different ecological conditions that are associated with rock shelter, perching sites, nesting sites, denning areas, wind protection and sand sheet accumulation areas. Local and migratory bat species roost and reproduce in the caves and crevices of the butte formations. The higher buttes provide the only local nesting sites for owls and other birds of prey.

Alpine Butte is the least disturbed butte in the County, with excellent stands of Joshua tree woodland and creosote bush scrub, and impressive wildflower displays when rainfall is appropriate. Lovejoy Butte has Joshua tree woodland and creosote bush scrub, with a central wind-blown sand community for a good mixture of rock and sand habitats. In addition, the close proximity of Lovejoy Butte to Big Rock Creek Wash increases the diversity of habitats in the area. It also suffers most from impact from the Lake Los Angeles community, which borders the butte on three sides. The clustering of buttes in the SEA may be important to the abundant and diverse wildlife that inhabits the various vegetation communities around and in the buttes. Saddleback Butte and Piute Butte together are protected as a state park, but Saddleback Butte is also subject to development for campsites and hiking trails. Piute Butte has a prehistoric site that may protect it from much recreational development. All of the buttes harbor diverse wildlife and flora. Most of them are critical habitat for the state and federally-threatened desert tortoise. Some buttes within the critical habitat are not included in the SEA.

The open agricultural lands, active and fallow, support a diversity of wildlife species, which essentially regard the fields and ditches as irrigated desert. Birds of prey frequently hunt over the open agricultural areas, including fallow fields; wide-ranging predators also find excellent hunting conditions in and around agricultural areas. A spectrum of local and migratory bat species feed over the irrigated fields in the spring and summer, when insect numbers are the highest, and at least one sensitive bat species, the pallid bat, forages in open scrub or ruderal desert habitats.

The northern portion of the SEA contains several unique habitat types, including mesquite bosque (threatened locally by lowering water tables and harvest for firewood), clay pan pools, vernal pools, alkali grasslands, alkali and freshwater marshes, and permanent ponds. Hundreds of bird species have been recorded from the pond and marsh habitats around the dry lakes and ponds, and numerous species nest on the playa margins or in the associated riparian habitats. The open creosote scrub and other xeric habitats on the slopes surrounding the lake playas serve as important wintering areas for many raptor species, as well as large numbers of song birds.

Vegetation

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs*. Sensitive plant species occurring or potentially occurring within the SEAs are discussed in the Sensitive Biological Resources section.

Desert Scrub: A comprehensive term for a number of relatively low-stature, sparse-cover communities of shrubs and sub-shrubs that commonly occur on open, sandy soils where groundwater is inaccessible,

except to a few deep-rooted species. Dominants include Great Basin sagebrush, antelope bush, creosote bush, several species of *Atriplex* (saltbush), rabbitbrush, cheesebush, sages, winterfat, and burrobrush, which are often with one or more perennial grasses (needlegrasses, sand drop-seed) interspersed. Formations dominated by saltbushes and other related taxa, which may be particularly common on alkaline soils, are sometimes called chenopod scrubs, in reference to the family *Chenopodiaceae*, which includes most of the dominant species. Within the SEA, variations on this community often intergrade with, or form understory within, juniper woodland and Joshua tree woodland. Variations are also found on lower slopes, around the buttes and on the adjacent Antelope Valley floor. These formations also occur extensively within the Desert-Montane transect segment of the SEA.

Corresponding MCV communities:

Krascheninnikovia lanata (winterfat scrubland) Shrubland Alliance
Suaeda moquinii ([*Suaeda nigra*] bush seepweed scrub) Shrubland Alliance
Atriplex spinifera (spinescale scrub) Shrubland Alliance
Pluchea sericea (arrow weed thickets) Shrubland Alliance
Artemisia tridentata (big sagebrush) Shrubland Alliance
Artemisia tridentata ssp. *vaseyana* (mountain big sagebrush) Shrubland Alliance
Atriplex canescens (fourwing saltbush scrub) Shrubland Alliance
Atriplex confertifolia (shadscale scrub) Shrubland Alliance
Atriplex hymenelytra (desert holly scrub) Shrubland Alliance
Atriplex lentiformis (quailbush scrub) Shrubland Alliance
Acacia greggii (catclaw acacia thorn scrub) Shrubland Alliance
Ericameria paniculata (black-stem rabbitbrush scrub) Shrubland Alliance
Ambrosia salsola (cheesebrush scrub) Shrubland Alliance
Baccharis salicifolia (mulefat thickets) Shrubland Alliance
Larrea tridentata (creosote bush scrub) Shrubland Alliance
Larrea tridentata-*Ambrosia dumosa* (creosote bush-white burr sage scrub) Shrubland Alliance
Atriplex polycarpa (allscale scrub) Shrubland Alliance
Eriogonum fasciculatum (California buckwheat scrub) Shrubland Alliance
Eriogonum heermannii (Heermann's buckwheat patches) Provisional Shrubland Alliance
Eriogonum wrightii (Wright's buckwheat patches) Dwarf Shrubland Alliance
Ephedra californica (California joint fir scrub) Shrubland Alliance
Allenrolfea occidentalis (iodine bush scrub) Shrubland Alliance
Sarcobatus vermiculatus ([*Sarcobatus baileyi*] greasewood scrub) Shrubland Alliance
Yucca brevifolia (Joshua tree woodland) Woodland Alliance
Prosopis glandulosa (mesquite bosque) Woodland Alliance
Ambrosia salsola (cheesebush scrub) Shrubland Alliance
Grayia spinosa (spiny hop sage scrub) Shrubland Alliance
Castela emoryi (crucifixion thorn stands) Shrubland Special Stands
Ericameria nauseosa (rubber rabbitbrush scrub) Shrubland Alliance
Gutierrezia sarothrae (broom snake weed scrub) Provisional Shrubland Alliance
Ambrosia dumosa (white bursage scrub) Shrubland Alliance
Eriogonum fasciculatum-*Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
Lepidospartum squamatum (scale broom scrub) Shrubland Alliance
Purshia tridentata (bitter bush scrub) Shrubland Alliance
Artemisia californica-*Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub)

Shrubland Alliance

Salvia apiana (white sage scrub) Shrubland Alliance

Chaparral: Consists of broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs that form a dense cover on steep slopes that are usually below 5,000 feet in Southern California. Dominant species found within this community include scrub oaks (several species), chamise, manzanita, wild lilac, toyon, and western mountain-mahogany. This plant community occupies internal slopes, particularly on north-facing exposures, within the higher elevations of the SEA. Shrubs are frequently interspersed as understory formations within oak and conifer woodlands.

Corresponding MCV communities:

Adenostoma fasciculatum (chamise chaparral) Shrubland Alliance

Adenostoma fasciculatum-Salvia apiana (chamise-white sage chaparral) Shrubland Alliance

Adenostoma fasciculatum-Salvia mellifera (chamise-black sage chaparral) Shrubland Alliance

Arctostaphylos glandulosa (Eastwood's manzanita chaparral) Shrubland Alliance

Arctostaphylos glauca (bigberry manzanita chaparral) Shrubland Alliance

Ceanothus cuneatus (wedge leaf ceanothus chaparral, buck brush chaparral) Shrubland Alliance

Ceanothus greggii (cup leaf ceanothus chaparral) Shrubland Alliance

Ceanothus crassifolius (hoary leaf ceanothus chaparral) Shrubland Alliance

Lotus scoparius ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance

Prunus ilicifolia (holly leaf cherry chaparral) Shrubland Alliance

Prunus emarginata (bitter cherry thicket) Provisional Shrubland Alliance

Rhus ovata (sugarbush chaparral) Shrubland Alliance

Grassland Communities: Consist of low, herbaceous vegetation that is dominated by grasses. This community also harbors native forbs and bulbs, as well as naturalized annual forbs. Only fragmentary representatives of native grasslands exist within the SEA, with mostly sand drop-seed colonies on relatively less-disturbed sandy substrates around the buttes. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species within this "community," which is a ruderal formation and not a true habitat or community, include oats, bromes, foxtail chess and other grasses, wild mustards and other disturbance-favored "weedy" taxa. Non-native grasslands and other ruderal formations occur in small patches throughout the SEA and cover much of the land left fallow from agriculture.

Corresponding MCV communities:

Avena (barbata, fatua) (wild oats grasslands) Semi-Natural Herbaceous Stands

Brassica (nigra) and other mustards (upland mustards) Semi-Natural Herbaceous Stands

Bromus (diandrus, hordeaceus)-Brachypodium distachyon (annual brome grasslands) Semi-Natural Herbaceous Stands

Bromus rubens-Schismus (arabicus, barbatus) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

Centaurea (solstitialis, melitensis) (yellow star-thistle fields) Semi-Natural Herbaceous Stands

Lolium perenne ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildflower Field: An amorphous mix of herbaceous plants noted for conspicuous annual wildflower displays, although noteworthy displays do not occur every year and appear to depend on rainfall patterns. Dominance varies from site to site and from year to year at any one particular site. Species

frequently present include California poppy, tidy tips, dove lupine, valley tassels, purple owl's clover, and broad-leaved gilia. Within the SEA, prominent wildflower fields occur on the south facing slopes of the Tehachapi Mountains and the buttes.

Corresponding MCV communities:

None at this time.

Southern Willow Scrub: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets that occur within and adjacent to seasonal or permanent watercourses. The "scrub" habitat is generally sub-mature, which is a state that is often maintained by frequent heavy over-flooding—and may attain woodland or forest stature if undisturbed for several decades. Dominant species of this community within the SEA are mulefat, sandbar and arroyo willow. Within the SEA this community primarily occurs along portions of the tributary drainages to Little Rock and Big Rock creeks, but elements of it also may occur around the periphery of ponds and marshes.

Corresponding MCV communities:

Salix exigua (sandbar willow thickets) Shrubland Alliance

Salix lasiolepis (arroyo willow thickets) Shrubland Alliance

Joshua Tree Woodland: Dominated by Joshua tree, which usually is the only arborescent species, and with numerous smaller shrub species interspersed. Shrub species commonly associated with Joshua tree woodland habitat include creosote bush, Great Basin sagebrush, California buckwheat, saltbush, horsebrush, desert almond, and antelope bush. Joshua tree woodland is present in varying densities and age formations over much of the less-disturbed uplands around the two primary washes, and throughout the Desert-Montane transect.

Corresponding MCV communities:

Yucca brevifolia (Joshua tree woodland) Woodland Alliance

Juniper Woodland: An open formation dominated by California juniper, often with an understory of desert scrub species, and sometimes mixed with chaparral or Joshua tree woodland at middle elevations. This community is found on lower slopes in the San Andreas Fault Zone.

Corresponding MCV communities:

Juniperus californica (California juniper woodland) Woodland Alliance

Juniperus grandis (mountain juniper woodland) Woodland Alliance

Juniperus osteosperma (Utah juniper woodland) Woodland Alliance

Mixed Conifer-Oak Woodland Formations: Typically consist of an overstory of oaks (canyon, interior live) intermixed with bigcone Douglas fir, incense cedar, and yellow pine of varying densities and compositions, depending on slope orientation, substrates, and fire history. Understory vegetation is usually dominated by chaparral species, such as scrub oak, manzanita, and wild lilac. This community occurs only in canyons in the higher elevations of the SEA.

Corresponding MCV communities:

Quercus chrysolepis (canyon live oak forest) Forest Alliance
Quercus agrifolia (coast live oak woodland) Woodland Alliance
Quercus wislizenii (interior live oak woodland) Woodland Alliance
Pinus coulteri (Coulter pine woodland) Woodland Alliance

Pseudotsuga macrocarpa-Quercus chrysolepis (bigcone Douglas-fir forest) Forest Alliance
Southern Cottonwood-Willow Riparian Forest: A broad-leaved winter-deciduous habitat that is dominated by Fremont cottonwood, in places mixed with willow or western sycamore. Southern cottonwood-willow riparian forest (or woodland) occurs within the SEA along segments of Little Rock Creek and Big Rock Creek, and rows of trees line the periphery of irrigated sites, lakes and ponds.

Corresponding MCV communities:

Populus fremontii (Fremont cottonwood forest) Forest Alliance
Populus trichocarpa (black cottonwood forest) Forest Alliance

Mesquite Bosque: Consists of dense thickets of mesquite trees, usually found where groundwater resources are sufficient in quantity and depth to support the trees. There are remnant patches of this habitat throughout the northern portion of the SEA, but most of the trees have declined or died as water tables have been drawn down and mesquite wood has been harvested. Several large, healthy stands of this habitat persist around the southern perimeter of the dry lakes.

Corresponding MCV communities:

Prosopis glandulosa (mesquite bosque, mesquite thicket) Woodland Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent cattail, which may reach heights of seven feet and grow in densities that form a closed canopy. Bulrush may also occur or be dominant within freshwater marsh. This formation occurs in scattered ponds and irrigation ditches throughout most of the SEA, but does form large, natural habitat areas at Piute Ponds and other pond sites around the dry lakes.

Corresponding MCV communities:

Phragmites australis (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
Schoenoplectus americanus (American bulrush marsh) Herbaceous Alliance
Schoenoplectus californicus (California bulrush marsh) Herbaceous Alliance
Typha (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance
Lemna (*minor*) and relatives (duckweed blooms) Provisional Herbaceous Alliance

Alkali Marsh: Similar to the freshwater marsh described above, but with more salt-tolerant plant species present. Species associated with this community include cattail, saltgrass and common reed. Alkali marsh occurs in small segments along Amargosa Creek, Edwards and Piute ponds, and other wetland areas scattered along the San Andreas Fault Zone.

Corresponding MCV communities:

Sarcobatus vermiculatus ([*Sarcobatus baileyi*] greasewood scrub) Shrubland Alliance
Schoenoplectus americanus (American bulrush marsh) Herbaceous Alliance
Sporobolus airoides (alkali cordgrass marsh) Herbaceous Alliance
Allenrolfea occidentalis (iodine bush scrub) Shrubland Alliance

Atriplex lentiformis (quailbush scrub) Shrubland Alliance

Suaeda moquinii (*[Suaeda nigra]* bush seepweed scrub) Shrubland Alliance

Desert Alluvial Wash and Alluvial Fan Scrub: Generally consist of a mixture of shrubs, which colonize and persist within infrequently scoured and flooded terrain such as floodplains, alluvial plains, or along seasonal streams. It is sometimes known as floodplain sage scrub. The dominant shrub in most washes is scalebroom, but Great Basin sagebrush, rabbitbrush, sweetbush, and chaparral yucca also may occur in the habitat type. This vegetation type is common throughout the alluvial plains and washes in the SEA.

Corresponding MCV communities:

Lepidospartum squamatum (scale broom scrub) Shrubland Alliance

Disturbed or Barren Areas: These are areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and “weedy” herbaceous species, native and non-native, including doveweed, mustards, telegraph weed, Russian thistle, dock, yellow star thistle, tocalote, Australian saltbush, and cocklebur. Disturbed areas occur throughout the SEA on fallow agricultural sites, around active agriculture and residential developments, along paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV Communities:

None at this time.

Wildlife

Wildlife within the SEA is moderately diverse and abundant, commensurate with the extensive acreage of natural open space and the relative diversity of habitat types. While a few wildlife species are entirely dependent upon a single vegetative community, the entire mosaic of vegetation communities within the SEA and adjoining areas constitutes a continuum of functional ecosystems supporting a wide variety of wildlife species, both within the SEA boundaries and as a part of the regional ecosystem.

Analysis of invertebrates is limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species, in excess of 1,000 terrestrial species. The wetlands and aquatic habitats within the SEA support diverse faunas of freshwater and alkaline pool arthropods, including native fairy shrimp, brine flies, and tiger beetles. Insect orders are particularly well-represented taxonomically, with moderate levels of species endemism including *Coleoptera*, *Diptera*, Hymenoptera and nocturnal *Lepidoptera*.

Amphibians generally are not present within desert habitats, except where surface hydrology persists throughout the year or breeding season. A limited number of species may be abundant in desert riparian areas. The more moist woodland areas and canyon bottoms of the montane portions of the SEA support abundant populations of more common amphibians, and in Little Rock Creek, the southwestern arroyo toad. Several species of salamander may also be present within the mesic upper reaches of the creek drainages. Open desert scrub habitats generally support diverse reptile populations, and the

overall herpetofauna of the SEA includes numerous lizard and snake species, along with western pond turtle and California desert tortoise.

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, and migrating raptors and song birds. Open xeric scrub hosts a suite of birds typical of such sites over a wide range of deserts, while the transition zones in the southern portion of the SEA attract species with desert and montane habitat preferences. The most productive sites for birds are the riparian corridors and freshwater systems, which attract large numbers of migrants during spring and fall, and provide abundant cover and food resources for songbird breeding use. The desert riparian woodlands and rocky buttes provide nest sites for raptors, many of which forage widely over desert scrub and agricultural lands. The playa lakes and seasonal pools, along with the ponds near the dry lakes, attract large numbers of migrating shorebirds, waders and waterfowl, and provide important winter foraging and sheltering areas for waterfowl and birds of prey.

Wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources.

Wildlife Movement

The SEA extends from the Angeles National Forest to the playa lakes within Edwards Air Force Base, encompassing most of the two largest drainages exiting the northern slope of the San Gabriel Mountain range. The geographical features of the SEA serve as a major habitat linkage and movement corridor for all wildlife species within its vicinity and in an intergenerational sense, many of the plant species. Ecologically generalist species (mountain lion, bobcat, coyote, gray fox, etc.) have the ability to move across such vast areas and through changing habitat types. For such species, the SEA may serve as an important system for long-term and genetic exchange among populations. For smaller or less-mobile species or taxa, which are narrowly restricted in their habitat needs, the SEA can serve as a broad linkage zone, in which individual movement can take place during seasonal population dispersal or over generations. This provides essential genetic exchange within and between metapopulations. The two drainages, combined with the upland terrestrial Desert-Montane transect portion of the SEA, ensure linkage and direct movement areas for all of the wildlife species present within the County portion of the Antelope Valley.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are

federally-listed as endangered or threatened, they often have federally-designated, geographically-specific “critical habitat areas.” Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The desert tortoise and mountain yellow-legged frog have critical habitat in this SEA. The arroyo toad has nearby critical habitat and may be present in the SEA.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDDB) [2011]. The CNDDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The sensitive communities include: mesquite bosque, Joshua tree woodland, desert grassland, southern willow scrub, southern cottonwood-willow woodland, fresh-water swamp, alkali meadow, Mojave riparian forest, and desert dry wash woodland. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

Mount Gleason Indian paintbrush (*Castilleja gleasoni*) RPR 1B.2

Desert cymopterus (*Cymopterus deserticola*) RPR 1B.2

Barstow woolly sunflower (*Eriophyllum mohavense*) RPR 1B.2

Mason’s neststraw (*Stylocline masonii*) RPR 1B.1

Robinson’s pepper grass (*Lepidium virginicum* var. *robinsonii*, [*Lepidium virginicum* ssp. *menziesii*]) RPR 1B.2

Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) RPR 1B.2

Robbins’ nemacladus (*Nemacladus secundiflorus* var. *robbinsii*), RPR 2.2

Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) RPR 1B.2.2

San Antonio milk-vetch (*Astragalus lentiginosus* var. *Antonius*) RPR 1B.3

Big Bear Valley woollypod (*Astragalus leucolobus*) RPR 1B.2

Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*) RPR 1B.1

Peirson’s lupine (*Lupinus peirsonii*) RPR 1B.3

Rock Creek broomrape (*Orobanche valida* ssp. *valida*) RPR 1B.2

Red rock poppy (*Eschscholzia minutiflora* ssp. *Twisselmannii*) RPR 1B.2

San Gabriel linanthus (*Linanthus concinnus*) RPR 1B.2

Parry’s spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.

Mojave spineflower (*Chorizanthe spinosa*) RPR 4.2

Johnston’s buckwheat (*Eriogonum microthecum* var. *johnstonii*) RPR 1B.3

Alkali mariposa lily (*Calochortus striatus*) RPR 1B.2

Parish’s alkali grass (*Puccinellia parishii*) RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

Arroyo toad (*Anaxyrus californicus*) FE, SSC
Desert tortoise (*Gopherus agassizii*) FT, ST
Swainson's hawk (*Buteo swainsoni*) ST
Western snowy plover (*Charadrius alexandrinus nivosus*) FT, ABC, SSC, BCC
mountain plover (*Charadrius montanus*) FT, CSC
Willow flycatcher (*Empidonax traillii*) SE
American peregrine falcon (*Falco peregrinus anatum*) SE
Bald eagle (*Haliaeetus leucocephalus*) FT
White faced ibis (*Plegadis chihi*) ST
Bank swallow (*Riparia riparia*) ST
Mohave ground squirrel (*Xerospermophilus mohavensis*) ST
Nelson's antelope squirrel (*Ammospermophilus nelsoni*) ST

In addition, several other state-listed species of special concern have the potential to occur:

Western pond turtle (*Emys marmorata*) BLMS, SSC, FSS
Mojave fringed-toed lizard (*Uma scoparia*) BLMS, SSC
San Diego horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
Chuckwalla (*Sauromalus ater*) (unusual in the County)
Two-striped garter snake (*Thamnophis hammondi*) BLMS, SSC, FSS
Cooper's hawk (*Accipiter cooperi*) CDFG Watch List
Sharp-shinned hawk (*Accipiter striatus*)
Tricolored blackbird (*Agelaius tricolor*) ABC, BLMS, SSC, BCC (nesting colony)
Southern California (ashy) rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
Bell's sage sparrow (*Amphispiza belli belli*) ABC, CDFG Watch List, BCC
Golden eagle (*Aquila chrysaetos*) CDF, CDFG Fully Protected, CDFG Watch List, BCC
Short-eared owl (*Asio flammeus*) ABC, SSC
Long-eared owl (*Asio otus*) SSC
Burrowing owl (*Athene cunicularia*) BLMS, SSC, BCC
Redhead (*Aythya americana*) SSC
California spotted owl (*Strix occidentalis occidentalis*) ABC, BLMS, SSC, FSS, BCC
Ferruginous hawk (*Buteo regalis*) CDFG Watch List, BCC
Vaux's swift (*Chaetura vauxi*) SSC
Black tern (*Chlidonias niger*) SSC
Northern harrier (*Circus cyaneus*) SSC
California gull (*Larus californicus*) CDFG Watch List
Yellow warbler (*Dendroica petechia brewsteri*) SSC, BCC
California horned lark (*Eremophila alpestris actia*) CDFG Watch List
Merlin (*Falco columbarius*) CDFG Watch List
Prairie falcon (*Falco mexicanus*) CDFG Watch List, BCC
Yellow-breasted chat (*Icteria virens*) SSC
Least bittern (*Ixobrychus exilis*) SSC, BCC
Loggerhead shrike (*Lanius ludovicianus*) SSC, BCC
White-faced ibis (*Plegadis chihi*) CDFG Watch List
Le Conte's thrasher (*Toxostoma lecontei*) ABC, SSC, BCC
Gray vireo (*Vireo vicinior*) ABC, BLMS, SSC, BCC

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) SSC
 Osprey (*Pandion haliaetus*) CDF, CDFG Watch List
 American white pelican (*Pelecanus erythrorhynchos*) SSC
 Double-crested cormorant (*Phalacrocorax auritus*) CDFG Watch List
 Pallid bat (*Antrozous pallidus*) BLMS, SSC, FSS, WBWG High Priority
 Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*) SSC
 Townsend's big-eared bat (*Corynorhinus (Plecotus) t. townsendii*) BLMS, SSC, FSS, WBWG: High Priority
 Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High Priority
 California mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High Priority
 Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium Priority
 Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG High Priority
 Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
 Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*) SSC, FSS
 American badger (*Taxidea taxus*) SSC

Ecological Transition Areas (ETAs)

Many areas designated as ETA characterize this SEA. Most of these ETAs are concentrated north of Avenue L and west of 140th Street where they are represented by large, contiguous agricultural fields with a checkerboard of active and fallow acreage. Similar conditions occur in a few scattered locations in the remainder of the SEA, but are not nearly as prevalent.

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE ANTELOPE VALLEY SEA

	Criterion	Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Critical habitat for the only known Antelope Valley population of the federally-endangered arroyo toad is adjacent to Little Rock Reservoir, upstream in Little Rock Creek, and some may still be found downstream of the dam in the SEA. The SEA encompasses much of the County ranges of the federally-threatened California desert tortoise, including much of the County critical habitat for the tortoise. The state-threatened Mohave ground squirrel occurs throughout much of the SEA. The SEA includes some of the critical habitat of mountain yellow-legged frog in the South Fork of Big Rock Creek. It includes habitat designated in the Western Mojave Plan (WEMO) for the alkali mariposa lily, which is a rare lily of the desert floor.

	Criterion	Status	Justification
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The mesquite bosque, sand sheet, rocky butte, desert riparian woodland, and alluvial fan sage scrub habitats are unique and regionally restricted biotic communities encompassed by the SEA. Desert species not, or rarely, found elsewhere in the County, such as verdin, black-throated sparrow, Mojave rattlesnake, desert banded gecko, Leech's prionid borer, and mesquite borer, occur within these habitats. Additionally, the ponds and other riparian and wetland systems in the northern portion of the SEA support numerous water birds and raptors not found elsewhere in the County.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The desert alluvial fan sage scrub, Joshua tree woodland, desert riparian woodland, mesquite bosque, alkali meadow/marsh, desert freshwater marsh, playa lake and seasonal pool habitats are located within, are unique to, or best represented within, the SEA.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in the County.	Met	The freshwater habitats within and around Rosamond, Buckhorn and Rogers dry lake basins have large concentrations of migratory and resident waterfowl and birds of prey, providing them with essential seasonal and permanent resources. The rocky desert buttes are unique roosting, sheltering, perching and nesting sites for birds of prey and bats. This SEA is centered on migratory routes for both plants and animals along principal desert washes and buttes that connect the mountains to freshwater playas.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The mesquite bosque that is located within the SEA is clearly at an extreme of its geographical range, along with its associated biota, such as the mesquite borer. Edge populations usually represent an unusual genetic variation in a population or community, and therefore meet the criterion of scientific interest as well as the criterion of a population at the extreme physical/geographical limit of its range.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The SEA encompasses some of the most biotically intact acreages of Joshua tree woodland, desert riparian woodland, and desert alluvial fan sage scrub remaining in the County. Mesquite was formerly widely distributed in the Antelope Valley, but due to harvesting, is now limited to a few protected areas, such as the Edwards Air Force Base.

In conclusion, the area described is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) populations of scientific interest at the edge of their range including the desert tortoise, the mesquite bosque, and the Mojave ground squirrel; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

3. Antelope Valley SEA Sources

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