
SAN ANDREAS SIGNIFICANT ECOLOGICAL AREA

General

The San Andreas Significant Ecological Area (SEA) is located in the western portion of the Antelope Valley in an unincorporated area of Los Angeles County. The area includes a small portion of the western Tehachapi foothills and then stretches in a southeasterly direction to include Quail Lake, the northern foothills of Liebre Mountain and Sawmill Mountain, large portions of Portal Ridge, Leona Valley, Ritter Ridge, Fairmont and Antelope Buttes, Anaverde Valley, Lake Palmdale, terminating at Barrel Springs, a sag pond near Palmdale.

Description

The San Andreas Fault Zone SEA encompasses a variety of topographic features. The location and orientation of the SEA coincides with a segment of the San Andreas Fault Zone. At its northwest end, the SEA encompasses a portion of the south-facing foothills of the Tehachapi Mountains. Moving southeast, the SEA contains the north-facing slopes of Liebre and Sawmill Mountains. The upper slopes of these mountains are densely vegetated with chaparral and scattered mixed woodlands. The lower slopes are more sparsely vegetated with scrub species, mixed scrub and grassland. The major grasslands occur on the flat Antelope Valley floor. Most of this portion of the SEA is undisturbed open space with few scattered residential developments. The peak of Liebre Mountain is the highest point in the SEA at 5,701 feet above mean sea level (MSL).

Portal Ridge, a series of peaks southeast of Liebre Mountain and on the north side of the San Andreas Fault Zone, is included in the SEA. Upper slopes are vegetated with dense chaparral, juniper woodland, and Joshua tree woodland while lower slopes are vegetated with scrub species. A series of small lakes occur along the base of the south-facing slopes including Lake Hughes, Munz Lake, Elizabeth Lake, and other smaller unnamed ponds. These are sag ponds on the Fault. The lakes are dammed areas uniting several sag ponds. Further southeast, the SEA surrounds Amargosa Creek and a large portion of its watershed located in the Leona Valley. On the north-facing slopes, two large washes drain to the Valley floor, namely Myrick Canyon and Willow Springs Canyon. The vegetation transitions to grasslands as the SEA stretches north across the valley floor and encircles Fairmont Butte and the Antelope Buttes of the Antelope Valley California Poppy Reserve.

Ritter Ridge is on the most easterly portion of the SEA. Slopes on the north side of this ridge line are vegetated with a Joshua tree/juniper mixed woodland. South-facing slopes contain

a mixture of scrub and chaparral communities. Many of these are unusual occurrences of vegetation for the mountains. Possibly the unusual vegetation is on land that has moved along the fault from another location. This section of the SEA includes Amargosa Creek and a portion of its watershed at the base of the south-facing slopes, and a segment of Anaverde Creek and watershed located in Anaverde Valley. These creeks support a variety of riparian communities.

The final portion of the SEA occurs as a separate unit at its eastern end. It includes Palmdale Lake, Una Lake, and Barrel Springs. The upland portions of this area are vegetated with a desert scrub community with scattered Joshua trees. The lower areas consist of open water ponds, cattail ponds, riparian woodlands, and other wetland communities.

Vegetation

Due to its unique location and the large variation in elevation and topography, vegetation within the San Andreas SEA is extremely diverse. The SEA includes arid desert communities, foothill woodland communities, high elevation pinon and chaparral communities, sag pond wetlands, desert and montane riparian communities, as well as grasslands and wildflower fields. In addition, the transition zones between these communities produce unusual species compositions. Sensitive plant species occurring or potentially occurring within the SEA are discussed below in the Sensitive Biological Resources section.

Plant communities within the SEA were classified using standard methodology and terminology. Most of the communities discussed correspond directly with those listed in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986 and 1992 update). Other communities are named based on dominant species within community boundaries and/or commonly used terminology. Descriptions and general locations of each plant community present within the SEA are presented below. These include desert scrub, chaparral, non-native grassland, native grassland, southern willow scrub, foothill woodland, Joshua tree woodland, juniper woodland, valley oak woodland, bigcone spruce-canyon oak woodland, southern cottonwood-willow riparian forest, freshwater marsh, alkali marsh, alluvial wash, and disturbed areas.

Desert scrub is a moderately tall, fairly open shrubland with several species contributing to the canopy. Dominants often include Great Basin sage brush, antelope bush, saltbush, and/or rabbitbrush with several perennial grasses dispersed between the shrubs. Within the SEA, this community often inter-grades with juniper woodlands and Joshua tree woodlands. Desert scrub is also found on lower slopes within the San Andreas SEA, on north facing slopes that transition onto the Valley floor, and on the Buttes and adjacent valley floor interspersed with grasslands.

The **chaparral** community consists of a mixture of broad-leafed, needle-leafed,

sclerophyllous (hard-leaved) shrubs of medium to tall height . These shrubs form a dense cover on steep slopes below 5,000 feet in Southern California. Dominant species found within this community include chamise, manzanita, California lilac, laurel sumac, toyon, and both western mountain-mahogany and desert mountain-mahogany. This plant community occupies most of the higher elevations within the SEA and is frequently interspersed with scrub and woodlands.

Grassland communities consist of low, herbaceous vegetation that are dominated by grasses but also harbor native forbs and bulbs as well as annual forbs. Grasslands within the SEA include both non-native and native grasslands. **Non-native grassland** consists predominantly of invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats, wild oats, ripgut brome, foxtail chess, wild mustard, red-stemmed filaree, Mediterranean schismus, and golden tops.

Native grassland consists of at least ten percent cover of native purple needlegrass, desert needlegrass species, and native forbs with the remaining coverage similar to non-native grasslands. A few small patches of native grassland can be found scattered throughout the SEA. The larger extents of native grasslands are mixed with non-native grasslands in more significant acreage on and surrounding the Buttes and on south facing slopes of the Tehachapi mountains at the western end of the SEA. Some areas of native grassland, such as those surrounding the Buttes, support a high density of wildflowers and are often referred to as wildflower fields. A characteristic of these grasslands or prairies is the substantial variation in amount of wildflowers displayed from year to year, which relates directly to high variability in amount and timing of rainfall.

Wildflower fields are areas with an amorphous mix of herbaceous plants noted for conspicuous annual flower displays. Dominance varies from site to site and from year to year at any one particular site. These areas might be termed “grasslands” in years with little display. 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 at the Buttes.

Southern willow scrub is a riparian community consisting of dense, broad-leaved, winter-deciduous riparian thickets occurring within and adjacent to water courses. The dominant species of this community within the SEA are arroyo willow, red willow, and black willow. This community occurs in segments along portions of many of the drainages as well as the periphery of many of the ponds and lakes in the eastern half of the SEA.

Foothill woodland is a broad community designation encompassing the tree-dominated plant communities occurring transitionally between grasslands and montane chaparral or bigcone spruce-canyon oak woodland. Dominant tree species include interior live oak, blue oak, valley oak, and foothill pine. Foothill woodland occupies much of the western extent of the SEA.

Joshua tree woodland is an open woodland, usually with Joshua trees as the only arborescent species, and numerous smaller shrub species filling the space between Joshua trees. Shrub species include Great Basin sagebrush, rabbitbrush, creosote bush, and cheese bush. Joshua tree woodland is present on the lower slopes in the eastern half of the SEA.

Juniper woodland is an extremely open woodland dominated by California juniper, with an understory typical of desert scrub as described above. The majority of this community is found only on lower slopes in the eastern half of the SEA, often intermingling with Joshua tree woodland and chaparral communities.

Valley oak woodland is an open woodland community dominated by valley oak. The understory is a grassy savannah composed mostly of non-native grasses. Valley oak woodland occurs on north-facing slopes of Liebre Mountain near the western extent of the SEA.

Bigcone spruce-canyon oak woodland is a dense woodland with a mix of dominant tree species. Canyon oak forms a broken canopy with bigcone spruce and California black oak; foothill pine is usually scattered among these. Areas not underneath the canopy are usually dominated by chaparral species such as scrub oak, manzanita, and California lilac. This community occupies most of the higher elevation slopes within the SEA.

Southern cottonwood-willow riparian forest is an open broad-leaved winter-deciduous riparian forest dominated by Fremont cottonwood, black cottonwood, black willow, and red willow. The southern cottonwood-willow riparian forest within the SEA occupies short segments of Amargosa Creek as well as the periphery of several lakes and ponds.

Freshwater marsh develops in areas of still or slow-moving permanent freshwater. This community is dominated by perennial cattails which reach a height of 2-3 meters and often form a closed canopy. Bulrushes are dominant below the cattail canopy. Freshwater marsh occurs in small patches along Amargosa Creek and other wetland areas scattered along the San Andreas Fault Zone.

Alkali marsh is similar to the freshwater marsh described above but with more salt-tolerant hydrophytes present. Species associated with this community include cattails, *Carex* spp. *Juncus cooperi*, saltgrass, *Nitrophila occidentalis*, *Scirpus nevadensis*, and common reed. Alkali marsh occurs in small segments along Amargosa Creek and other wetland areas scattered along the San Andreas Fault Zone.

Also known as floodplain sage scrub, **alluvial wash** vegetation includes phreatophytic trees (a plant type that obtains water from the water table via a long taproot) and upland shrubs that occur in infrequently flooded and scoured habitats such as flood plains, or seasonal streams.

The dominant shrub is scalebroom with Great Basin sage brush, rabbitbrush, sweetbush, and chaparral yucca. Alluvial wash is distributed in larger water courses such as upper Amargosa Creek, Myrick Canyon Wash, Willow Springs Wash and other drainages located throughout the SEA.

Disturbed or barren areas 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 mustards, telegraph weed, Russian thistle, dock, yellow star thistle, Australian saltbush, and cocklebur. Several disturbed areas occur scattered throughout the SEA and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Wildlife

Wildlife within the SEA is diverse and abundant due to the large acreage of natural open space and the diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the area and adjoining areas constitutes a functional ecosystem; this ecosystem contains a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

Analysis of invertebrates on any given site generally 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. 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.

Amphibian populations are generally scarce in desert habitats but may be particularly abundant where desert riparian areas occur. The SEA supports a variety of amphibians within wetland areas along the San Andreas Fault Zone and the moister woodland areas and canyon bottoms of the mountains. Many essential reptilian habitat characteristics are present within the SEA. These include open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics as well as a diversity of habitat types support a diverse reptilian fauna.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources and abundant raptor foraging, perching, and nesting habitat. The combination of these resources as well as the confluence of

many community types support an unusually high diversity of bird species. Not unlike other taxonomic groups, small and large mammal populations within the SEA are diverse and reflective of the unique confluence of several habitat types.

Wildlife Movement

The San Andreas SEA includes several important linkages for wildlife movement. The Fault Zone connects with the Santa Clara River drainage in the Lake Hughes area, linking with this large, free-flowing watershed that extends to the Pacific Ocean in Ventura County. The foothills and grassland in the westernmost tip of the SEA are part of an important linkage between the San Gabriel Mountains and the Tehachapi Mountains. This linkage to the Tehachapi Mountains is important because it connects the southernmost extent of the Sierra Nevada Mountains with the San Gabriel Mountains and with the southern Coast Ranges. The Tehachapi Mountains are the only mountain linkage between the Transverse Ranges and the southern Coast Ranges to the Sierra Nevada Range. This largely natural area may be an important topographic reference for migrating birds and bats, as well as functioning for essential high elevation foraging grounds along their migration route. The Tehachapi Mountains further provide a valuable link for gene flow between divergent populations of many species, including plants. The SEA includes several large drainages that extend from the San Gabriel Mountains to the western end of the Mojave Desert: the Antelope Valley floor and the Fairmont and Antelope Buttes. These washes provide an important linkage for animals traveling between the mountains (all the ranges mentioned above) and the Mojave Desert. In addition, Amargosa Creek facilitates east-west wildlife movement through Liebre Mountain, Portal Ridge, and Ritter Ridge to Barrel Springs in the Antelope Valley near Palmdale. The frequency of valuable riparian communities along this travel route located within an otherwise arid climate, further indicates the importance of this area, which is one of the busiest natural wildlife linkages in the region.

Sensitive Biological Resources

Sensitive biological resources are habitats for individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, rare, or otherwise sensitive due to the species' declining or limited distribution or population sizes, usually resulting 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, that have been afforded special recognition.

Sensitive Plant Communities/Habitats

This report/description supports several habitat types considered sensitive by resource agencies, namely the CDFG [California Natural Diversity Database (CNDDDB)], because of their scarcity and support of a number of state and federally listed endangered, threatened, and rare vascular plants, as well as several sensitive bird and reptile species. These communities include: **Joshua Tree Woodland, Valley Oak Woodland, Native Grassland, Wildflower Field Southern Cottonwood-willow Riparian Forest, Freshwater Marsh, Alkali Marsh, Alluvial Wash, and Southern Willow Scrub**, which occur throughout the area. These communities or closely related designations are considered highest-inventory priority communities by the CDFG, indicating that they are experiencing a decline throughout their range.

Sensitive Species

Sensitive species include those listed, or candidates for listing by the USFWS, CDFG, and CNPS. These species include, but are not limited to, Nevin's barberry, short-joint beavertail, Pierson's morning glory, alkali mariposa lily, California red-legged frog, southwestern pond turtle, California horned lizard, coast patch-nosed snake, two-striped garter snake, merlin, prairie falcon, mountain plover, burrowing owl, California spotted owl, southwestern willow flycatcher, California condor, Mojave ground squirrel, and southern grasshopper mouse. In addition, the SEA identifies other species observed, recorded in the CNDDDB, or reported in previous documentation as observed within or in the immediate vicinity of the SEA.

Ecological Transition Areas (ETAs)

A few ETAs are designated within this SEA, where orchards or agricultural fields occur.